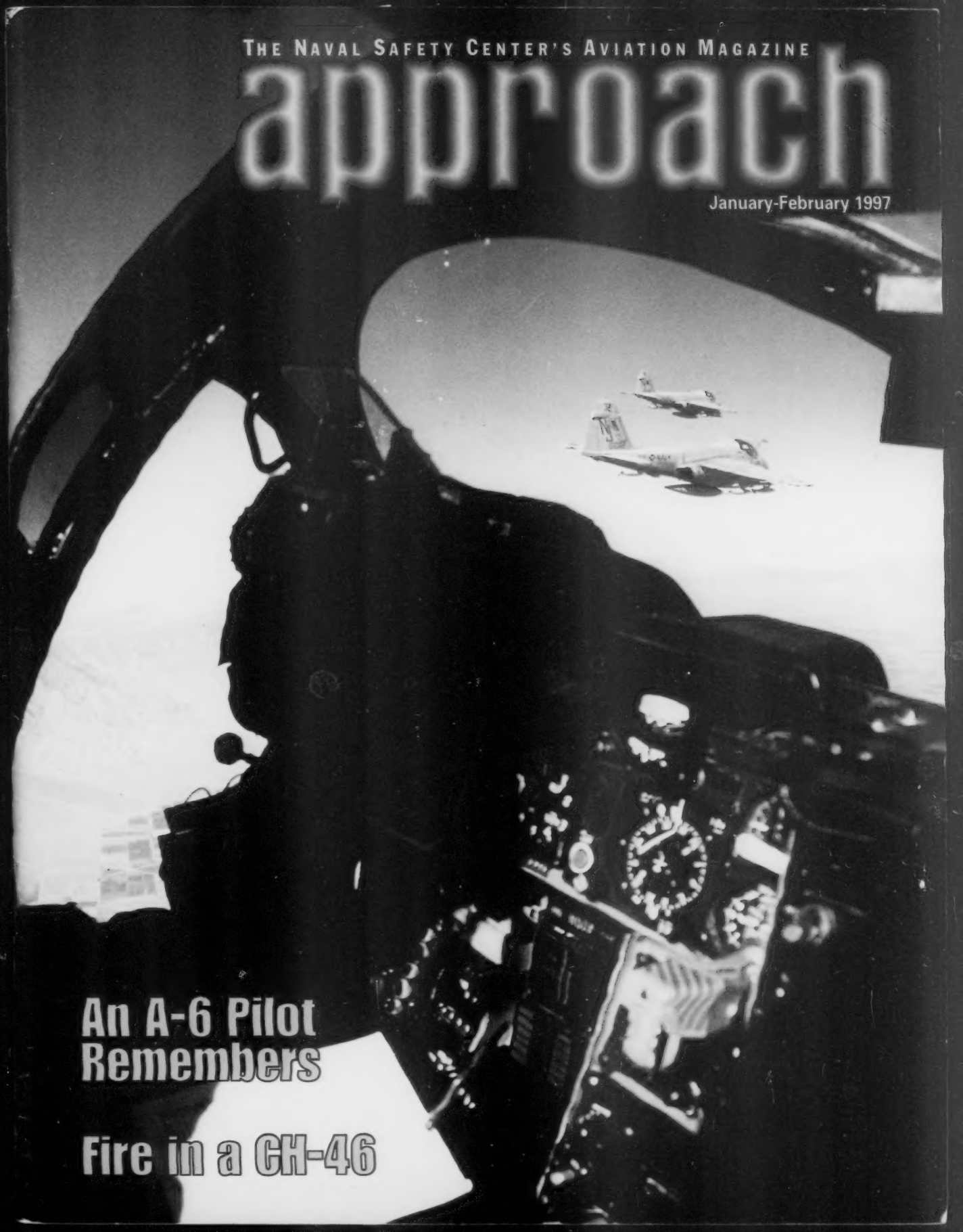
THE NAVAL SAFETY CENTER'S AVIATION MAGAZINE

approach

January-February 1997



An A-6 Pilot Remembers

Fire in a CH-46

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Volume 42, Number 1 January-February 1997

On the cover: A-6 Intruders. *Photo by Chris Bartmann.*

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pg. 23

DEPARTMENTS

Air Wing:

Centerspread Pullout

Pop-ups

- Birds on the Move
- Melatonin Doesn't Fly
- Stand-Down, Stand-Up or Step-Back
- Shallow-Dive Bombs Fall Short
- Shear-Pin Glitch
- New NAVSAFECEN Reserve Unit

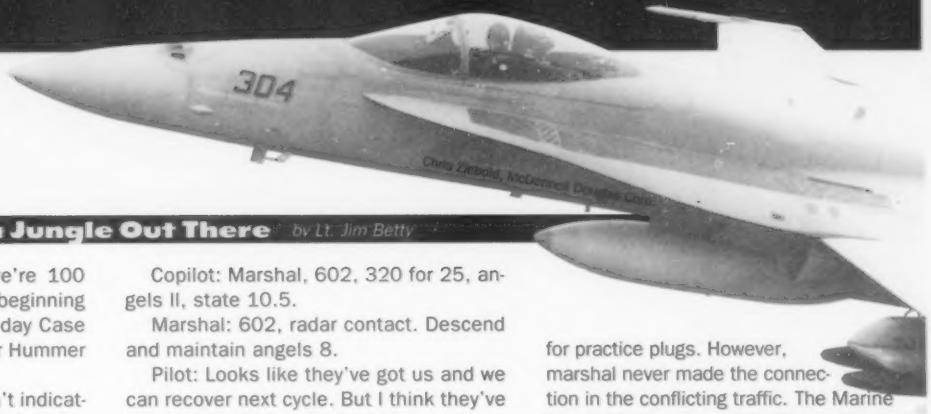
Bravo Zulu

- VP-5
- VAW-125
- HMH-363
- HMLA-369
- VFA-25
- VT-86

FEATURES

Lessons Learned

There are two ways to get smart. One is through experience – we call this "the hard way." The other is to learn through others' experiences. The second method is much easier on our machines and bodies.



It's a Jungle Out There

by Lt. Jim Betty

It's an overcast day, and we're 100 miles west of SOCAL on the boat beginning a work-up cycle. The event is a day Case II. We take the cat shot, and our Hummer is in the air in seconds.

Uh oh, the right main gear isn't indicating up-and-locked. A glance out the side window and, sure enough, the gear doors are still open. The gear is hung.

Copilot: Coming up on six miles; start your turn.

Pilot: Roger, got it. Let's finish the checks and call a rep.

Copilot: Sounds good. Here comes the radial.

Pilot: Roger. Things are getting kind of busy. Starting a climb.

Copilot: Departure, 602 passing 2.5 on top looking for a rep.

We briefly talk with the rep, describing the problem and our desire to recover with the next cycle. We switch to strike. Strike switches us to marshal 25 miles in front of the ship.

Copilot: Marshal, 602, 320 for 25, angels II, state 10.5.

Marshal: 602, radar contact. Descend and maintain angels 8.

Pilot: Looks like they've got us and we can recover next cycle. But I think they've got guys tanking at 7, 8 and 9.

Marshal: 602, climb and maintain angels 11.

Pilot: What marshal radial are they working?

Copilot: Hey, do you have that Hornet at your 10 O'clock? Closing left to right.

Pilot: The what?

Copilot: Where's his wingman?

Pilot: I don't know. I only see one.

Copilot: OK, I've got his wing off the right side.

Pilot: That was close. I could see the oil streaks under his belly. So much for positive radar contact.

As it turned out, marshal knew a section of Hornets was turning inbound after launch for practice plugs. However, marshal never made the connection in the conflicting traffic. The Marine Hornet pilots were new to the carrier environment and were concentrating on finding the tanker — not a Hummer. By the time the lead saw the E-2, all he could do was split the section to avoid a midair. We stayed dirty and landed. The rep said air in the lines kept our main gear from retracting.

Lessons Learned:

1. Know where you are and what's going on around you. See traffic before it becomes a problem. It's a jungle out there.

2. In traffic, always have at least one crew member looking outside the aircraft.

3. Don't become engrossed in a minor problem that may lead to a bigger one.

Lt. Betty flies C-12s at NAS North Island. He flew E-2s with VAW-116.

Lt. Mike Harrison

How to Keep Your Hair Looking Great

by LCdr. John Fristachi

I guess it's just a matter of following the rules. There are a lot of things to remember when you're fighting and having a good time. ACM never really seems like work, or even dangerous. Yet it is.

OPNAV 3710 has a funny rule about ACM: the pilot must always assume the other pilot does not see him. How strange to make rules about what you should think. Here's what happened when I forgot what to think. An F-16 — the green one that Topgun used to fly — was literally miles away from me. I stopped watching him and looked for another poor sap to kill. Then, I heard his burner go by my canopy! That was good for 10 gray hairs, as well as a quarter inch of my RIO's hairline. TACTS said we passed within 110 feet of each other, but we all knew that's pod-to-pod. I don't know how close our wingtips were.

Another rule says when you're in doubt, pass left-to-left. Left is always left, even when both guys are going vertical in opposite directions. That's the beauty of the system.

Once, I was having fun in an F-5, getting a rare, uphill shot at an F-16. Just as I was running out of airspeed, he decided to go for a right-to-right pass. We stepped on each other's radio call. After trying to eat the stick, losing sight, and departing my jet, we passed. The Viper driver's tape didn't look too bad, but nothing looks bad through that pretty HUD.

Or does it? Remember the rule about breaking off forward-quarter missile attacks at 9,000 feet to ensure safe separation? I was flying my Viper to simulate a clueless Fishbed when an FRS student forgot that rule. His shot was getting really sweet, and I guess it was the first time he had heard the AIM-9M make that growling sound. His RIO instructor finally told him to stop boresighting me. This time, TACTS said 74 feet. More gray hairs.

ACM never really seems like work, or even dangerous.

Simple rules, even innocuous. But seeing how quickly a fight can go from great fun to sheer terror, I get the feeling that someone knew what they were doing when they wrote them.

I'm a stickler when it comes to training rules. Like a lot of people, I only have to be hit on the head two or three times before I learn something. Remember the rules and keep your hair looking good.

LCdr. Fristachi flies with VF-213.

We're on

We had just crossed the pond for our first cruise in the squadron. It had been uneventful with only two sets of fly-days during the two-week translant. We were current, but proficiency, as we all know, is a completely different matter.

On the second day of flying after passing through the straits, we were getting back into the rhythm. We briefed, hitting all the usual high points and getting the numbers straight, then paid a quick visit to the wardroom for a bite before the three-hour-plus flight.

Up on the flight deck, we were spotted on elevator 3. As we started up and went through the post-start checks, we noticed a slight, acrid smell just as we completed the drop-tank pressure checks, and the COTAC began the takeoff checks. Because the jets had been sitting for awhile and because the smell dissipated quickly, we wrote it off as stale bleed-air in the lines and pressed.

As we taxied toward the bow cats, we noticed the smell again, this time more pronounced and with indications of a serious problem.

While our concern grew, I found my brakes didn't feel right. My COTAC, on the other hand, was doing his best contortionist impression trying to avoid the burning insulation falling between his legs. This is where the rust began to show. The fumes were light, so our first priority was to determine the cause of the sparking.

The next thing I heard was, "We have a fire in the cockpit!" as the overhead panel in front of the COTAC burst into flames, inches from his head.

Dealing with my own emergency, I had moved the brake-selector switch to the emergency position, and the brakes seemed to be holding, although I could not engage the parking brake.

Meanwhile, the COTAC was calling, "Tower, 702 has a fire in the cockpit."

The next things on my mind were the immediate-action items for fire in the cockpit, but I didn't know any emergency by that title. Then, the light bulb came on — electrical fire. For a couple of seconds there had been a breakdown in crew communication in identifying the emergency and the immediate action required. By the time we figured out the problem and had gone through the steps for an electrical fire, the relatively small fire had become a fireball about 8 inches in diameter, producing very acrid fumes — all in 30 seconds.

The flames diminished after we secured the electrical power, but the fumes became so intense we now had a new concern. The COTAC's next transmission was, "702 is shutting down and getting out."

We safed our seats, and one of the back-seaters got the hatch open as we scrambled out. I stayed long enough for the blueshirts to get some chocks under us.

Fire!

by Lt. Don Cioffi and Lt. Kurt Sanborn

Meanwhile, the crash crew was in the cockpit and put out the fire.

During the debrief, we agreed that we handled the whole thing fairly well, but there were some areas we could have done better. First, we should have donned our oxygen masks immediately, even though the threat seemed to be minor at first. But as we saw first hand, it can quickly escalate to a serious and even dangerous situation. If we hadn't gotten out as quickly as we did, the fumes could have overwhelmed us in a matter of seconds.

Clear, concise comm is essential to determine the problem and to do procedures quickly. We found it a lot more confusing during an actual emergency then when you talk about it during the brief. It makes me think back to all those hours of aircrew-coordination training lectures I sat through in the FRS.

Situations won't be as cut-and-dried as they are in NATOPS, but you have to quickly evaluate the emergency and execute the immediate-action items. In the end, after reviewing the PLAT tape, we found that the entire incident only took 90 seconds.

Lt. Cioffi and Lt. Sanborn flew with VS-24. Lt. Cioffi was killed in a recent mishap, and Lt. Sanborn is now assigned to VT-10.

Because the jets had been sitting for awhile and because the smell dissipated quickly, we wrote it off...

Peter Mersky

"That was the best crew coordination in any scenario I have ever seen..."

The Moles Earn Their Keep

by LCdr. James D. Settele

As we moles sat in the back of our darkened tube more than 300 miles from the carrier, we heard the unmistakable sound of our port engine flaming out. E-2C procedures for a front-end emergency are for the NFOs to back up the pilots with our PCLs, make radio calls, then assist in any other way.

We had just taken over control of the box from AWACS when the engine failed. It got very quiet for a couple of seconds. As the mission commander, I spoke with the newly-designated CAPC (this was only his second flight as aircraft commander) to determine the problem and examine our options. Then, I deselected the front end and concentrated on what we could do in the back. At the same time, the pilots kept the entire back end selected so we could monitor their progress and maintain SA.

First, we coordinated with AWACS to have them retake control of the box. Our brethren in blue were a great asset as they also notified the ship on SATCOM, notified Riyadh and Kuwait, and even relayed our diplomatic clearance to Kuwait.

As we passed King Khalid Military Complex, our first thoughts were to land at the nearest suitable field, Kuwait International. Fortunately, we had long-range JTIDS comms with mother and our rep. Later, we heard that we were not a divert and that, in fact, we were directed to return to mother. This caused a little adrenalin flow, but the battle group was leaving the Gulf that evening for Australia.

During the flight back to mother, we coordinated with AWACS and the rep on board ship. We also spoke to Kuwait Center, which had assigned an approach controller just in case we ended up at their field (we were also squawking 7700).

By this time, I was backing up the pilots with my PCL as they went through the checklist first for air start and then air-start-prop-failed-to-unfeather. At 177 miles from the ship, the pucker factor was still there at the

thought of a single-engine approach in hot weather with a heavy aircraft. We discussed options, including bingo fuel, approach factors, possible problems on rollout, and our ditching procedures.

At 50 miles out, we met our Greenbush (C-2) friends on their squadron common. Familiar with our situation, they decided to stay airborne between the ship and Dhahran, our divert field. They coordinated a potential recovery at Dhahran if we decided to divert. We handled the extra coordination, including reps on JTIDS voice and button 6, while the pilots flew the airplane.

As we closed the ship, we tried level flight with landing configuration at 10,000 feet, then 5,000 feet. We barely maintained altitude with max power — not a pleasant thought if we boltered or had to wave off. At this point the pilot decided, by himself, to go to Dhahran. As we headed in that direction, the Hummer rep tried convincing the pilot to first try the airplane in landing configuration at 2,000 feet. With some confidence building and persuasion from the copilot and me, we got the pilot to at least head back toward the ship for a simulated pass at 1,200 feet. He tried it, talked to the crew about it, and decided we could try it for real.

At about this time, the ship, sensing a lack of confidence and deciding the *Approach* magazine "chain of events" was likely to come to a bad conclusion, diverted us. When we replied that we would like to make an approach, the reps noticed a much higher level of confidence in the pilot's voice and decided to bring us to the ship. As we set up for our first pass, the front end talked to the Boss and paddles, while I talked to the rep.

On our straight-in, I called out airspeed and distance to the boat as the pilots were busy with staying on glide slope and centerline. A beautiful pass ended up caught in the burble with full power on and a sickening, sinking feeling.

We barely crossed the ramp (four feet hook-to-ramp). The nose came over, and we hook-skipped down the deck gathering speed for level flight on our bolter. Total silence for 10 seconds ensued: no radio calls, no ICS, nothing! As our speed at 70 feet rose to 130 knots, we started a slow climb. The copilot and I then started talking to the pilot to find out how he felt and what he thought about trying it again. With his confidence still intact, we decided to try another pass and then called the Boss to let him know. At this point, if we had decided to go to the beach, no one on board the ship would have argued.

Our next pass started pretty badly. The ship had slowed a bit to lessen the wind over deck and consequently was in a port turn to get the winds down the angle. We were lined up left chasing lineup. The copilot was trying to tell the pilot to keep coming right but was having trouble breaking through the pilot's concentration. Again, I called airspeed and distance to the ship. In hindsight, as we called, "Hawkeye, ball," we probably should have waved off, but a play for lineup and a serious settle after we crossed the ramp brought us to the 1-wire and a promise of hugs and kisses from the backenders.

Should we have diverted? Should we have dumped more fuel? Should we have waved off the second pass? I was most interested in the crew coordination throughout the entire incident. With a number of available radios, we NFOs were talking and coordinating with numerous agencies and keeping the pilots informed. The pilots discussed nearly every decision with us. There was a lot of confidence building and mutual support on everything from emergency checklists to lessons learned from a previous single engine I had experienced.

E-2 NFOs definitely have something to contribute in an emergency. Whether putting out a fire, backing up on a checklist, or building front-end confidence, you play a crucial part. Our community breeds total teamwork and, in emergencies, that credo is especially important.

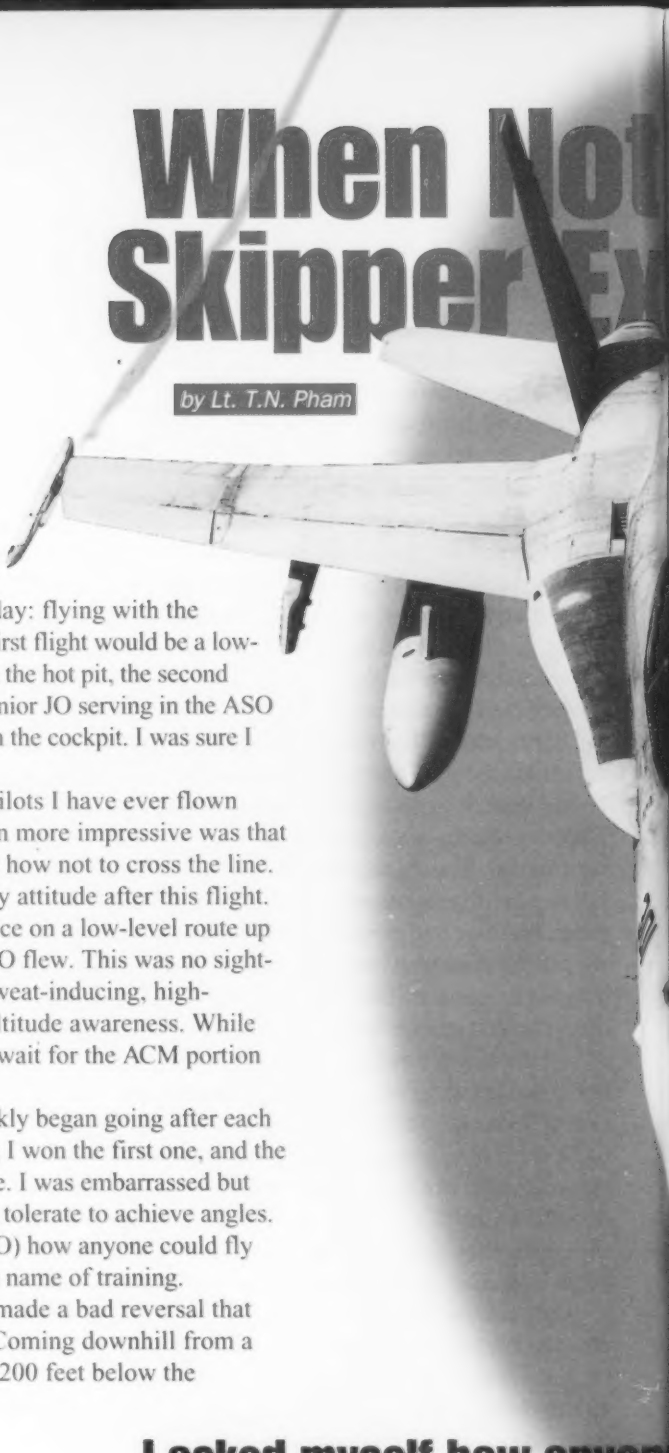
The CRUDESGRU Staff NFO, who was unfortunate enough to be in the back, summed it up best when he said, "That was the best crew coordination in any scenario I have ever seen. It definitely contributed to the safe return of five aircrewmen."

And my comments to the troopers waiting for us on deck after we shut down in the wires? "The back end is up."

LCdr. Settele was flying with VAW-113 at the time of this incident. He is currently a placement officer in BUPERS.

When Not Skipper Ex

by Lt. T.N. Pham



What a great deal on a beautiful Lemoore day: flying with the skipper on an out-and-in to Fallon. The first flight would be a low-level-lat hop, and after a quick run through the hot pit, the second flight would be 1 v 1 ACM. I was the squadron's senior JO serving in the ASO billet and was feeling very savvy and comfortable in the cockpit. I was sure I could always make mature and safe decisions.

The skipper was one of the most aggressive pilots I have ever flown with. He maximized training on every flight. Even more impressive was that he knew the exact limits of his abilities and knew how not to cross the line. I thought I did too, but I would have to rethink my attitude after this flight.

The first part went great — an intense road recce on a low-level route up to Fallon. I had to smile at how aggressively the CO flew. This was no sight-seeing trip through the mountains, but a high-G, sweat-inducing, high-workload flight that really reawakened my low-altitude awareness. While going through the hot pit at Fallon, I could hardly wait for the ACM portion — the favorite hop of any Hornet JO.

We took off, went straight to the area and quickly began going after each other. After two engagements, the score was even; I won the first one, and the CO put the pipper burns into me on the second one. I was embarrassed but had to marvel at how many G's the old man could tolerate to achieve angles. I asked myself (as I often did when fighting the CO) how anyone could fly that aggressively and endure that much pain in the name of training.

We started our third and final engagement. I made a bad reversal that allowed the CO to gain an offensive advantage. Coming downhill from a looper, the altitude warning came on as I dipped 200 feet below the

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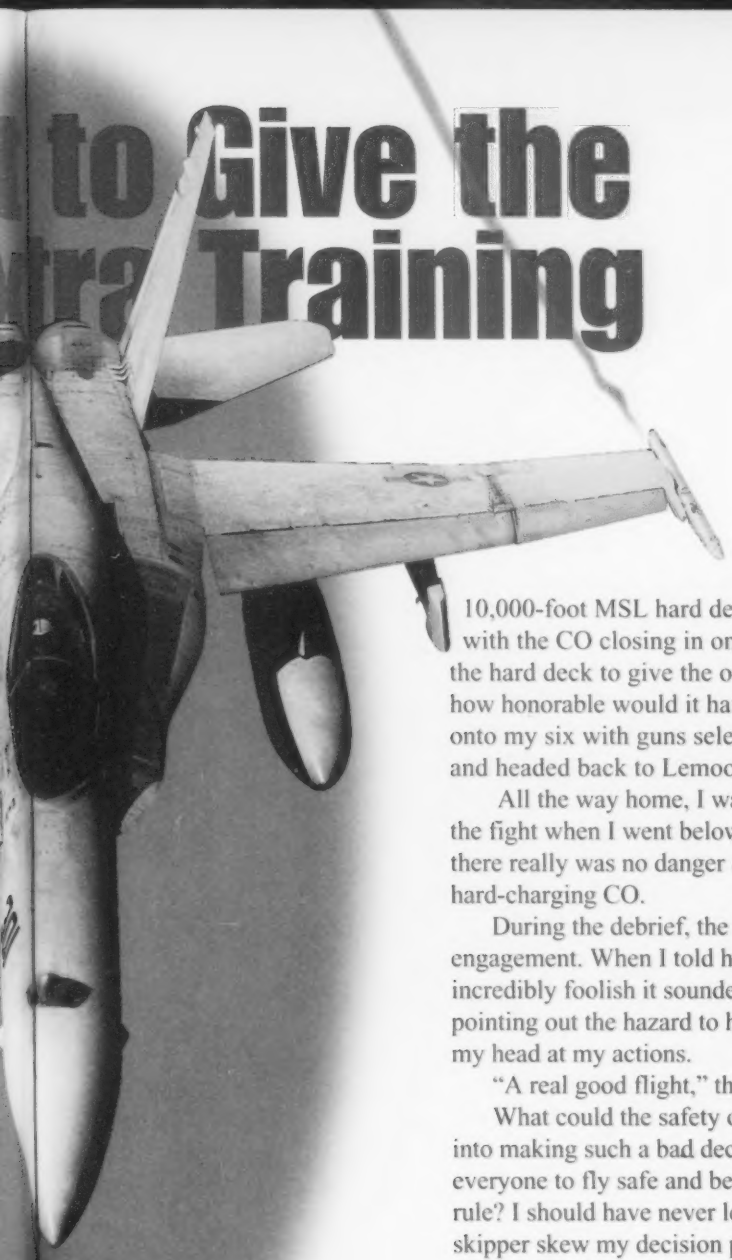


10,000-foot MSL hard deck. I thought about calling, "Knock it off," but with the CO closing in on my six, I decided to just wallow the jet above the hard deck to give the old man extra training at guns tracking. Besides, how honorable would it have been if I called knock-it-off as the CO rolled onto my six with guns selected? We ended the engagement soon afterward and headed back to Lemoore.

All the way home, I was bothered by my decision not to immediately end the fight when I went below the hard deck. I justified it by telling myself that there really was no danger and that I was only providing more training for my hard-charging CO.

During the debrief, the CO asked about my decision at the end of the third engagement. When I told him about my thought process, I realized how incredibly foolish it sounded. The CO was soft-spoken and diplomatic in pointing out the hazard to his safety officer. I could only sit there and shake my head at my actions.

"A real good flight," the skipper said jovially to wrap things up.

What could the safety officer have been thinking? How did I get lulled into making such a bad decision? How can I get up at an AOM and tell everyone to fly safe and be careful, then go out and break an ACM training rule? I should have never let the fact that I was flying with my aggressive skipper skew my decision process. I let a false sense of honor and a false desire for training stand in the way of sound judgment. It should never matter who or what kind of pilot is in the other jet; training rules should never be violated. You don't apply them only 99 percent of the time.

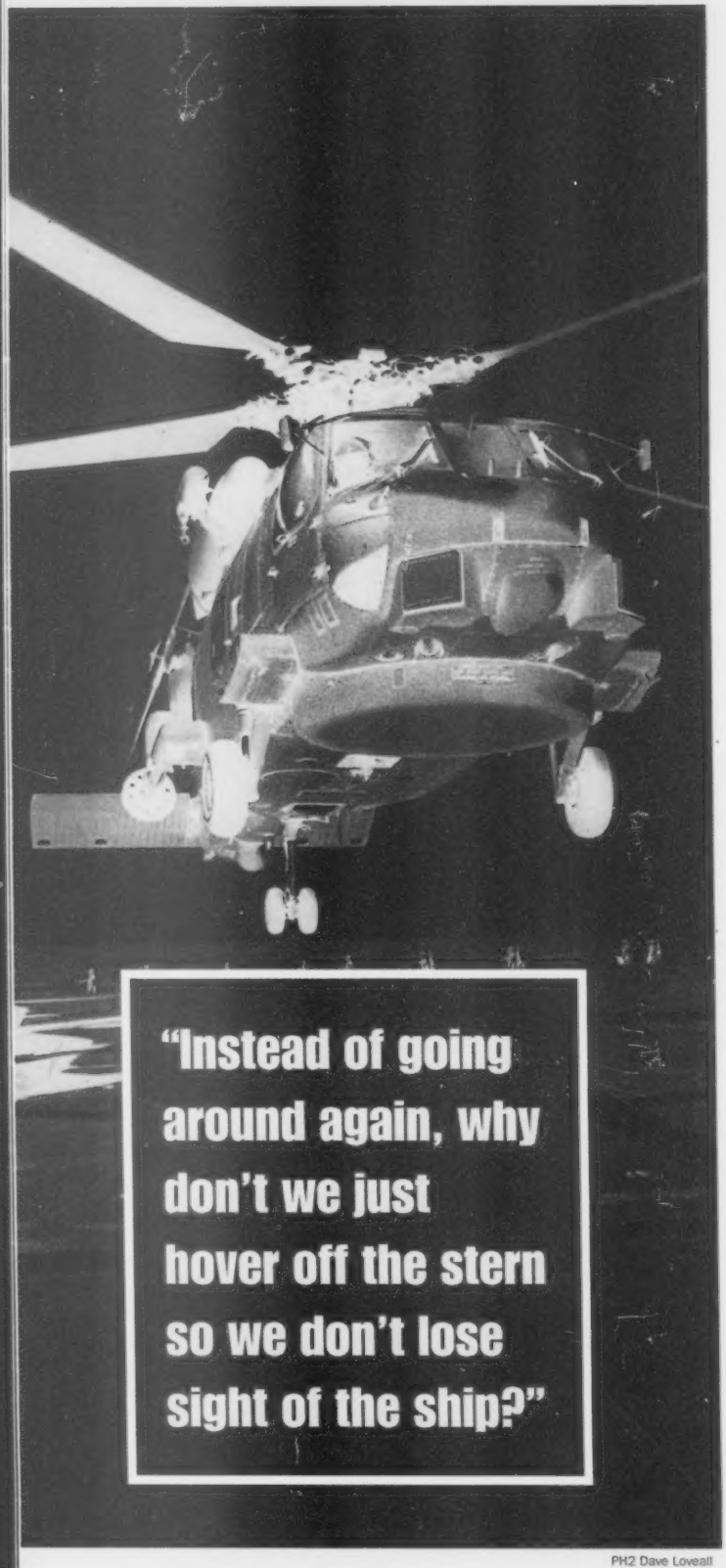
Lt. Pham flies with VFA-113.

could fly that aggressively

in the name of training.

How's

by Lt. Lawrence K. Zelvin



"Instead of going around again, why don't we just hover off the stern so we don't lose sight of the ship?"

PH2 Dave Loveall

After six weeks of NATO exercises and liberty all over northern Europe, we were starting to head home. Even though our big operations were over, we still had to provide homeplate with surveillance support. During one such mission in the English Channel, a routine hop unexpectedly turned into a "there I was" story.

After about an hour of identifying contacts for mom in the haze, we decided to climb and find the sun. At 3,000 feet, we broke out — CAVU. Endless days of light rain and fog had finally ended. We were loving life. Then, with an hour to go before flight quarters, the ASTAC called to talk about something other than our fuel state.

"Hey, how's the weather where you are?" he asked.

"Awesome! We've climbed above the haze. Why?"

"Well, looking through the deck camera it seems like the vis is getting worse," he replied.

"OK," I said hesitantly. "We'll see what the weather's like out ahead of PIM."

As the ATO, I decided to use the *predict position* function on the multipurpose display to find out where momma would be in an hour. The pilot took up the heading, and we started a slow descent. On the way down, we felt that the weather was probably fine but figured that we'd better check it out just to be safe. After all, visibility throughout the cruise had been fairly crappy but never dangerous.

At 1,000 feet, we started to get into the haze layer again. The vis seemed OK. Passing through 400 feet, we were still sure that we'd break out of the thick haze at any second. At 300 feet, we began to wonder why we weren't breaking out. Heck, visibility actually seemed to be getting much worse. When we leveled at 50 feet, we were zero-zero!

s the Weather?

As we climbed back to 500 feet, I asked the SENSO to switch to *radar* because I noticed he had switched to *nav parameters* to monitor the altitude. I was concerned that there were literally dozens of ships and oil rigs all around us, some as much as several hundred feet tall, and I didn't want to hit one. The pilot turned toward mom and called for the OinC.

"Hey, what's up?" the OinC asked.

"We just flew to our recovery position, and the fog's pretty thick," the HAC replied. "How's the weather around you?"

"I checked the flight deck a little while ago, and I'd say it's less than a mile-and-a-half. How's it out in front?"

"Well," the HAC said, "it's zero-zero just ahead of PIM. I think we should call flight quarters early and cancel the hot pump."

"Roger that," the OinC replied. "There's no reason to continue. Bring it on back."

At about a quarter of a mile from mom, I could just barely make out the ship. Things had gotten worse quickly. Flight quarters had been called, but we were still about another 10 minutes from a green deck. We started our approach at about a mile.

At a quarter of a mile, we had the ship in sight once again. We were 40 knots, 125 feet AGL and at red deck. At that point, I said, "Instead of going around again, why don't we just hover off the stern so we don't lose sight of the ship?"

The HAC said he was thinking the same thing and started a smooth approach to a hover just off the starboard side. Within a few minutes, we had a green deck for free-deck recovery. Soon after the waterwash, the ship was zero-zero and remained there well into the night.

Ship's company must keep an eye on the weather and report any changes to the aircrew immediately. Our ASTAC's astuteness that day made the difference between shooting a safe TACAN approach and an emergency low-visibility approach (ELVA).

All crew members should be assigned certain tasks and then monitored as necessary. As we briefed, the pilot stayed on the gauges and used the TACAN and the SENSO to get home. The ATO backed up the pilot on instruments and kept a visual scan for homeplate. The SENSO monitored *radar* and occasionally switched up *nav parameters* to keep an eye on the altitude. Everyone had a primary task and then backed up the rest of the crew, as necessary.

It's important to use assets inside the aircraft as well as on the ship. The OinC was told immediately about the aircraft's situation and could have provided further assistance if required. If an ELVA had become necessary, we would have saved several minutes just by having the OinC in combat for coordination.

The weather behind and ahead of PIM might be better than it is at the ship's current location. Luckily, we broke out on our TACAN approach.

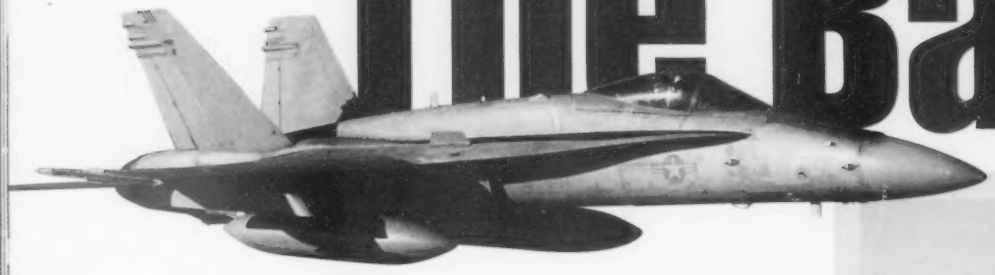
Waving off from a low-vis approach is not always the best option in helicopters. When you break out, regardless of the deck's status, it may be better to hover near the stern of the ship instead of making several approaches in the clag.

Ironically, we discussed many of these crew-coordination issues during a det safety stand-down just a few days earlier. Our crew agreed that our recent stand-down had reemphasized important ACT concepts, making our coordination during that flight a little easier.

Lt. Zelvin flies with HSL-42.

The Bash

by Lt. Michael E. Boyle



Rats, the scheduler has punished me with a day off again because I'm trying to get ahead of the skipper on traps. Maybe if I hang around the ready room, one of the "seagulls" will offer me a hop.

As luck would have it, a spare opens up. My roommate briefs one of our nuggets on the ins and outs of a day bomb-smoke mission. I can't remember the last time I flew during the day. We cover all the basics, including a weather backup of AIC. Borderline drysuits, 1,000-foot overcast up to who knows, and rain. Although we're blue-water ops, we cover a couple of diverts, including their weather, runway length, arresting gear, and TACAN.

We put on our poopie suits and head up to the flight deck. A little coaxing of the yellow shirts, a minor hex on the go-birds, and before you know it, the nugget is down for INS. My roommate goes into tension on cat 2 while I get spotted on cat 1. I launch seconds behind him, joining on his right wing within four miles of the ship. It doesn't get any better than this.

We break out at about 12,000 feet, 20 miles northeast of the ship. My lead kicks me into cruise formation, but I keep it a little tight as we turn back toward mother for our mission gas from the A-6. We're in a climbing left turn when I take a peek at the radar and get a contact on the nose, close.

My lead's right wing and the Tomcat's right wing hit with nearly 1,000 knots of closure.

at Brindisi

I get an auto-lock on the contact and realize we're very close at the same altitude. Back to an outside scan and it's slow-motion. There are two Tomcats about 300 feet away, heading straight at us. Now that time has come to a standstill, I watch the lead Tomcat skim over me no farther than 50 feet away. My scan shifts from the Tomcat back to my lead who is now having a very close right-to-right pass with the wing Tomcat. My lead's right wing and the Tomcat's right wing hit with nearly 1,000 knots of closure.

Time assumes normal speed, and I realize my lead is still flying, even though his jet is missing its right wing from the wingfold-joint. Fly-by-wire is a beautiful thing. I reach down to call up the waypoint for our primary divert of Brindisi, Italy, and give my lead a vector. We talk about getting rid of the right tank (centerline and right-wing external tanks) because it's still full. Being the aeronautical engineers we are, we figure that it might improve the situation. Upon further review, however, lead decides not to mess with a good thing. The Hornet is flying, and the fuel is transferring. We decide to slow down and do a controllability check. He finds he can get down to 220 knots in this non-flight-tested configuration. We're not going to mess with the flaps because a split-flap situation is likely and would definitely not

I get the approach and tower frequencies from my kneeboard card. I'm glad I wrote them down because I never would have found them under Brindisi — its actual name is Casale.

help matters. Fortunately, there aren't any hydraulic or fuel leaks. Now, how do we get into Brindisi? My lead decides to keep the lead, as flying form off me is out of the question. I stay with him as we penetrate. We plan to descend over water and break out VFR, which shouldn't be a problem since it's forecast to be 2,000 overcast and 6 miles visibility.

I get the approach and tower frequencies from my kneeboard card. I'm glad I wrote them down because I never would have found them under Brindisi — its actual name is Casale.

We descend and are talking to tower, who is also calling VFR at the field. Unfortunately, we realize that the Italians have a different view of VFR because we don't break out until 500 feet. We drive toward the TACAN instead of the waypoint. About 15 miles from the field, we get a traffic call on a helo, which turns out to be the SAR helo from USS *Vicksburg*. The Tomcat crew had flown to 10 miles off Brindisi and ejected, and the helo was recovering the crew.

As we troll in, we confirm that there is arresting gear at Brindisi. The tower controller is hard to understand as he tells us, "Yes, BAK?" Of course, he's talking about the BAK 12, bi-directional arresting gear that's listed in the IFR supplement. Three miles from the TACAN, we still can't see the field. It finally dawns on me that the TACAN is not on the airfield. Back to the waypoint for navigation. It's now raining hard while I am giving my lead vectors to line him up on centerline.

Finally, we have the runway in sight. There is a harbor just short of the approach end, and I watch my lead shoot a 210-knot approach around a ship. He touches down just past the gear, which turns out to be in the runway threshold.

To my surprise, I watch him take off. He decides to rethink this situation airborne while we talk to tower more about the gear's location. Now I'm getting a little low on fuel, and I decide to put it down just in case he rolls out and clobbers the intersecting runway as well. I watch him come around again, but this time he must have had a hook-skip.

Actually, the gear turns out to be bi-directional and the 210-knot Hornet sliced it without slowing down at all. It did, however, throw him into a slide, so he decided to take it around. An American gets on the radio and tells us it's departure-end gear only. Down to 1,800 pounds, lead's going to land this pass regardless.

I'm now stopped on the parallel taxiway at midfield of an 8,000-foot runway, watching my lead go by at 150 knots! Not much braking action in a driving rain storm with carrier-pressurized tires and a 205-knot touchdown speed. He hits the departure-end gear at 80 knots, which stops him only feet from the end of the runway.

After a quick chat with the base commander, my lead is into the helo for a ride back to the boat, and I man up for a 20-minute flight back to an OK 4-wire on a very dark night. With our stereos once again safe, we head to the wardroom to get a slider with our Tomcat buds, and rehash our most exciting adventure.

Know your divert. There was a little note in the en-route supplement that mentioned the BAK 12 was unusable. Have the coordinates already dialed in for the primary divert even if you're blue-water ops. Know when the TACAN isn't on the field. Know the name of the field even if it's listed on the air plan as something else. Even the note about ships on final was in the approach plate.

Don't fly parade when you don't have to. If I had been stepped out a little more, I might have been able to better use the radar to avoid a collision.

Lt. Boyle was with VFA-81 at the time of this midair. He is now an instructor with VFA-106.

Keep Your Visor Down!

by Lt. Kristofer L. Zimmerman

It was a perfect night for GCAs at Miramar. FCLPs were in full swing, and the controllers wanted to work. The final controller told us to fly the published missed approach, so I broke out the approach plate and raised my visor so the glare of the cockpit lights wouldn't interfere with reading what I had written on my kneeboard.

On GCA final, 1,500 feet, 130 KIAS, with F-14s in the pattern... blaam! I felt the thud vibrate through my boots, and I thought something had hit the radome or the radome had left the aircraft.

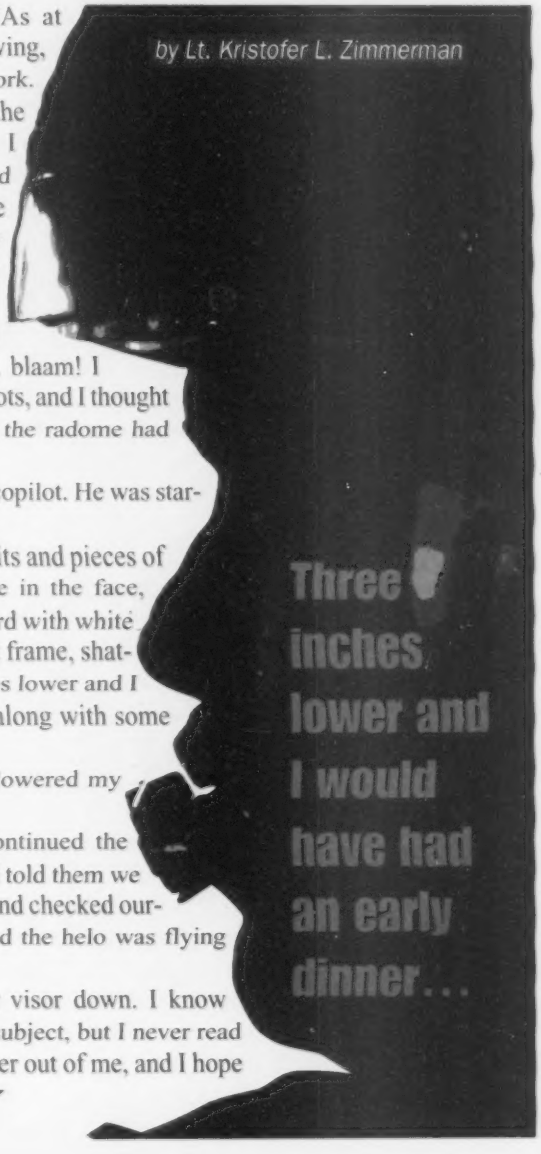
"What was that?" I asked my copilot. He was staring at my windscreen.

As I turned to face forward, bits and pieces of the windscreen began hitting me in the face, chest and lap. A medium-sized bird with white feathers had hit the upper support frame, shattering the plexiglass. Three inches lower and I would have had an early dinner along with some unwanted cuts.

"Slow down!" I yelled as I lowered my visor.

My copilot complied and continued the approach while I called tower and told them we would be landing. We shut down and checked ourselves over. No one was hurt, and the helo was flying again in a few hours.

The moral? Keep your clear visor down. I know we've seen other articles on this subject, but I never read them. This incident made a believer out of me, and I hope it will make one of you, too.



Lt. Zimmerman flies with HSL-47.

All Pilots Love Acronyms, Pal!

by Lt. Dave Lineback

I tried to focus on the instrument panel, and after only a couple of breaths, I was gasping for air...

"Get the aircraft down! Put on your oxygen!"

The XO shouted his orders from his place behind the copilot. As I nosed the autopilot over and reached for my smoke mask, my fingers began tingling, and I felt the onset of tunnel vision.

We were a crew of 21 (16 aircrew and five non-aircrew) flying a routine repo in an EP-3E from Misawa AB in northern Japan to Kadena AB on Okinawa. I was a second pilot with more than 800 hours, sitting in the left seat at the controls. The copilot in the right seat was a qualified PPC, and the aircraft commander, the XO, was sitting behind the copilot next to the flight engineer (FE).

The XO was discussing maximum-range, fuel-consumption profiles with the flight-station crew. We were level at 26,000 feet, VMC, and the sun had just risen to reveal a beautiful morning. We decided to climb to FL 280 to burn fuel more efficiently. Cabin altitude was 9,200 feet, and the copilot asked the engineer if we could make the climb and still maintain cabin altitude below 10,000.

The FE and the XO replied yes, because the XO had flown the plane the previous day on a shakedown flight and had easily made 28,000 feet with only minor changes in the cabin-pressurization system.

The copilot coordinated our request with Tokyo Center, and I initiated the climb by disengaging the autopilot's barometric altitude-hold and set a 1,000-fpm climb with the thumb wheel (autopilot pitch controller) at normal-rated power.

As the aircraft climbed, the FE noted the cabin-pressurization differential building up and began turning the outflow valve. At first, the outflow valve was stuck in the closed position, and while the FE tried to open it, the valve went to full-open. Imagine his surprise!

Cabin altitude immediately began rising uncontrollably. As it passed 10,000 feet, the copilot called out that the "CABIN ALT" annunciator light had come on, which is not uncommon in climbs at the high end of pressure differential. Everyone in the flight station, including the FE, expected the FE to get the cabin altitude back below 10,000 feet so we wouldn't have to don our oxygen masks and descend.

The FE realized that something was wrong with the outflow valve when he could not immediately regain control. He called for me to level off, which I did at 27,200 feet using the thumb wheel with the autopilot still engaged. From the left seat, I could not see what was happening, but I could feel the pressure changes in my ears. As the copilot and the XO watched the cabin-altitude gauge wind through 11,000 feet at more than 2,000 fpm, they still expected the FE to regain control. The XO couldn't believe this was happening. This entire sequence took 10 seconds, and before anyone realized the severity of the situation, hypoxia rapidly began to take its toll.

My mask immediately fogged up as I took the yoke and announced over the ICS that I had the controls. I tried to focus on the instrument panel, and after only a couple of breaths, I was gasping for air; I wasn't getting any oxygen through my mask. My first reaction was to remove my mask, but in my hypoxic-clouded judgement, I thought by removing my mask I would become more hypoxic.

Instead, with my mask totally fogged up, I felt for the emergency-oxygen selector switch on the regulator. As the air was blasted into the mask, it began to clear; so did my head.

I heard the XO yelling to get the aircraft down, and I thought of the acronym "APLAP," which is the term we use in P-3s for the emergency-descent procedure. The first step is to disengage the autopilot, which I did, and I was momentarily confused as to why the aircraft began leveling off. I pushed the yoke forward and slowed the descent rate above 4,000 fpm. I was definitely feeling hypoxic, and I was having difficulty concentrating on what each letter in the acronym stood for. For all I knew, it could have meant "All Pilots Love Acronyms, Pal!"

The second step is to adjust the power levers in the desired position, so I retarded them to flight idle. The "L" is for landing gear. The numbers 190 and 300 came into my head, but I could not focus on which speed went with what gear position. It was only now that I looked at the airspeed gauge and noted it at 270 KIAS. Our squadron has set the maximum allowable airspeed of 250 KIAS for the EP-3E in our Stan Notes to prevent damage to the HF dogleg antennas. I was having problems even locating the airspeed indicator, let alone remembering if or when I was allowed to exceed that speed.

The next step is to set airspeed, and I decided to accelerate to VNE just to get the aircraft down as quickly as I could. I announced over the ICS that we had exceeded 250 knots, but nobody responded.

My head cleared passing through 17,000 feet, and I saw that the copilot was still fiddling with her oxygen mask. I called Tokyo Center and told them we had lost pressurization and were descending to 10,000 feet. Tokyo asked if I was declaring an emergency. I replied no, but we needed to get down to 10,000 feet immediately.

During training, we learn to pass the controls to the other pilot while we don our oxygen masks one at a time. Because the hypoxic effects were immediate upon loss of pressurization, the copilot did not consider donning her mask simultaneously. Instead, she waited for me to put mine on and guarded the controls. She became very anxious for me to get on O_2 as she felt herself slip away to La-La Land. She did not hear my ICS call that I had the controls and was fixated on flying the aircraft. When the XO saw that I had control, he yelled for the copilot to don her mask.

By now the copilot's coordination had deteriorated, and she had difficulty putting on her mask. Her smoke mask immediately fogged, and she had to go on emergency oxygen to see. However, feeling the effects of hypoxia, she was reluctant to remain on emergency oxygen because she recalled two recent P-3 HAZREPs that said only 20 minutes of oxygen were available on emergency air. By the time her mask was on and clear of fog, we were descending through 13,000 feet.

Meanwhile, the XO asked the FE, who had been struggling with the outflow valve the entire time, if he wanted his oxygen mask and put it on him from behind. The XO saw the cabin altitude level off at 25,000 feet and told me to get my mask on and descend.

He was the least task-fixated person in the flight station, yet it wasn't until he saw the off-duty FE enter the flight station, shaking uncontrollably, that he remembered there were other people on the aircraft! He went aft and saw that everyone was either being given oxygen with the walk-around bottles or was giving it. When he re-entered the flight station, we were level at 10,000 feet, and he talked with the copilot about what we were going to do.

She recommended returning to Misawa, about 45 minutes away, and she coordinated our return with Tokyo Center. An hour later, we were safe on deck.

Meanwhile, Back in the Tube...

by Lt. Dan Rader

The passengers were having a time of it. Lying on the deck with my head by the port over-wing escape hatch, I noticed three things simultaneously: I heard air escaping from the hatch's seal, my ears popped rather strongly, and I suddenly became very cold. I started feeling light-headed and had difficulty breathing.

I stood up and headed toward the cockpit. Before I stood up, my hand had been about 12 inches from an AVIOX bottle — a portable oxygen bottle in the EP-3E that carries about 20 minutes of air. But I never thought of it.

Remember the inflating glove in the altitude chamber? There was a much better show back in the galley. I saw a big cloud of steam, and the folks in the galley were trying to clean up the coffee that had just erupted from the pot like a miniature Mt. Vesuvius.

I got to the nav station before I forgot where I was going and decided to rest. The Nav and 3P were sitting there with puzzled looks, oddly enough, discussing hypoxia. I sat down on the deck and saw the off-duty FE trying to enter the flight station. Shaking and twitching like a hurt puppy, he seemed to be having a tough time standing up.

Everyone was feeling the effects of hypoxia. One crewman thought she had eaten bad raisins because her stomach was upset. Another crewman woke up and thought he had been sleeping on his arms because they were tingling. Still another person desperately tried to get into the head but couldn't figure out how to open the door before he threw up.

Three crewmen did go for oxygen bottles. One looked at the AVIOX bottle, but despite training, in his present state, he couldn't figure out how to open it. The second man had trouble connecting the hose but finally did it and gave oxygen to the others. The third man looked at the bottle on the bulkhead and didn't see the quick-release latch. Instead, he started looking for a toolbox key to get a ratchet and remove the entire bracket!

Three crewmen did go for oxygen bottles. One looked at the AVIOX bottle, but despite training, he couldn't figure out how to open it.

Changes in skin tone were dramatic. We saw bone-white, legal-pad yellow, and in the words of one crewman, "A face that looked like a Smurf!"

We must have descended quickly because people started functioning again. Someone passed an oxygen mask to me, and I took some exquisitely deep breaths. The XO came aft and told me to make sure everyone was OK by doing some activity like playing patty-cake. I asked everyone their full name and social-security number. Some folks were still groggy.

After we landed, we spent the day at medical. We all agreed that the overwhelming feeling, besides relief, was complete exhaustion. We all felt that we needed more training in operating the AVIOX bottles. Four of us had taken physiology training only a week before the flight, and two were the people who got the bottles working.

Lt. Lineback and Lt. Rader fly with VQ-1.

Mud Daubers Florida, Too!

Following an extended winter cruise to the Arabian Gulf, Mediterranean Sea and Adriatic Sea, we returned to Cecil Field for some time with our families. We also planned a comprehensive stand-down.

People not on leave returned to work after four days to unload trucks, move into hangar spaces, set up shops, and carry out the proposed stand-down. Squadron aircraft were parked on the flight line, with their only movement being scheduled maintenance, such as 14-day and 42-day inspections.

After 10 days of rest and relaxation, our thoughts turned to flying once again. The flight schedule was not nearly the operational tempo that the squadron had been used to on cruise. Squadron maintenance personnel prepared the aircraft for flight–doing dailies, servicing, safe-for-flight paperwork–all routine stuff. In our minds, flying a four-turn-four was child's play when compared to the 20 to 30 sorties we had flown every day on board ship.

Four aircraft were started and taxied to the runway without a hitch. Maintenance personnel were satisfied with the fruits of their labor and remained on the flight line to watch the launch. Three aircraft launched uneventfully, but the fourth aborted its takeoff roll because of an air-data caution (with no airspeed indication). Within 10 minutes, the airborne aircraft all called in with emergencies, citing air-data cautions.

We'd just had more in-flight emergencies in one launch at home than we had the entire cruise.

Maintenance inspected all four aircraft but couldn't find any problems. The mission computers in each aircraft did trigger a caution, showing a problem related to air-data computer sensors. Suspecting the forward pitot tubes were the cause of the caution, troubleshooters looked into them and noticed that a sand or mud substance was packed about two inches into the pitot tube. It appeared that someone or something had packed a foreign substance deep into the pitot tube out of the average plane captain's view. Only the port-side pitot tubes were packed (the side not seen from the hangar), and the pitot tubes looked clean on the outside.

Preliminary investigations pointed to possible sabotage. The Naval Criminal Investigative Service (NCIS) was called in to determine if any foul play had occurred. Meanwhile, all four aircraft had the pitot tubes cleaned and tested, and all aircraft were returned to flight status with no further problems. All other squadron aircraft were inspected for possible contamination, but nothing else was found.

The next day, our sister squadron began a flight schedule after a similar 7-to-10-day post-cruise stand-down, and the same thing happened: in-flight emergencies, air-data cautions. NCIS again checked things out.

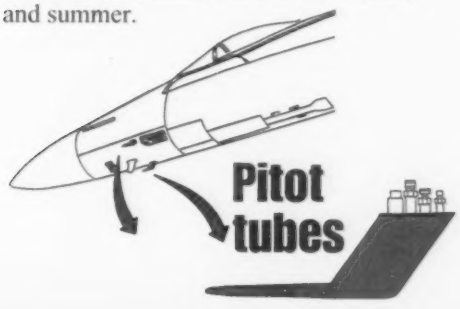
s Like

by Lt. Phil Hans

This time, however, there was more evidence. What appeared to be parts of insects were purged from the port pitot tube of one aircraft. We called other VFA and VS squadrons on board NAS and found they had similar problems with aircraft that remained on the flight line without flying for an extended period.

NCIS asked the Navy Vector Ecology and Control Center, Jacksonville for advice. They reviewed the pitot tube samples and reached some very reasonable conclusions:

- Mud daubers and related wasps (family Sphecidae) are known to build mud nests in confined areas such as pitot tubes.
- It takes up to three weeks for a mud-dauber larva to develop from egg to new adult.
- Mud daubers and their relatives will provision their nests with insects and spiders, providing a food source for their developing young.
- Nests of mud daubers vary widely in appearance and consistency.
- Mud-dauber wasps are prevalent in the local area, especially in the early spring and summer.



If you're checking for mud daubers, don't rely on eyesight alone...

Aircraft remaining on the flight line for extended periods must be completely secured, including pitot covers. During daily inspections of aircraft being prepared for flight, you should pay attention to pitot tubes that have been exposed to known mud-dauber activity. Plane captains should know what mud-dauber activity looks like and report anything suspicious. If you're checking for mud daubers, don't rely on eyesight alone to inspect deep into pitot tubes and other hard-to-view areas.

Lt. Hans is the MMCO for VFA-37.

"Go Down! Go Down!"

by Lt. David A. Goodman

All of us can rattle off the sayings we learned in the training command and the FRS: Never assume anything, complacency kills, and maintain a solid lookout doctrine. If flying becomes routine, one or more of these sayings can apply to whatever happens to ruin your day.

It was just another glorious, hot, summer day in the Persian Gulf. My crew and I had the honor of being scheduled for the mid-day launch and were now slowly boiling in our own juices in our Prowler. We were going to provide jamming support for a section of FA-18s flying against F-15s. I was looking forward to being ECMO 1 for this flight, because it would be my first time facing F-15s.

Finally, when we looked well done, they broke us down, and we headed for the cat. After a solid shot, we cleaned up and started a climbing turn west, heading for the beach. We passed by the mid-Gulf tanker track, but did not see the KC-135 we knew was on-station there. Our playmates were getting a quick gulp of gas and would meet us in the area.

We called the F-15s after our rendezvous with the Hornets and flew several runs against the Air Force fighters. The training was over too soon, and we joined up on the Hornets for the short flight back to the ship. Checking through Bahrain Center at FL200, the flight turned east to a sweet lock on mother. Looking at the Hornets on our left, my pilot and I saw the Air Force tanker heading west, 1,000 feet below and three miles off. We decided to break off the Hornets and head back to the ship as a single. After kissing them off, we started a slow descending right turn to the southeast.

Approaching 19,000 feet, my pilot and I were both looking forward and to the right. Something just did not feel right to me, but a quick look inside the cockpit showed nothing wrong. Looking outside to the left, I did not see anything. Something still did not feel right, so I leaned forward and looked left again. Out from behind the canopy rail loomed a KC-135 and two fighters, co-altitude and nose on at less than half a mile!

I mashed the ICS button down and stammered, "Go down! Go down!" My pilot reacted instantly, jamming the stick forward. We dropped like a stone as the killer tanker and company flew right through where we would have been. The rest of the flight back to the boat was without incident, and we flew an OK pass to the 3-wire.

We reviewed our near midair in the debrief. We had known we were near the tanker track but had seen a tanker going the other way. We assumed there was only one tanker, the usual number, and we knew he was behind us. That assumption almost got us an interservice kiss-of-death. Our front-cockpit lookout had also broken down in the turn, allowing the tanker to get far too close before we picked him up.

On the plus side, our crew coordination in getting out of the situation was very good. My pilot reacted instantly to my non-standard call to descend. He never looked outside to confirm why I wanted to descend; he just did it. That trust probably saved our lives. We have since standardized our calls in the front cockpit and solidified our lookout doctrine.

Lt. Goodman was with VAQ-136 at the time of this incident. He is now assigned to VAQ-129 as an instructor.

Capt. Joseph Woodward
Capt. John Fitts

The crew of Gunfighter 82 was flying a cross-country from Camp Pendleton to Kingman, AZ, when they noticed unusual engine torque, Ng, and MGT readings. Capt. Fitts (PAC) reduced power to maintain engine limits. As he and Capt. Woodward analyzed their situation, the No. 1 engine of their AH-1W had a rollback, a malfunction that has occurred several times in this community during the last two years.

Capt. Fitts tried EECU lockout (manual fuel) three times without success. The situation was complicated by an ICS failure. The two pilots were able to regain communication using the radio, and Capt. Woodward read NATOPS procedures to Capt. Fitts.

Next, Capt. Fitts rolled the No. 1 throttle to flight idle, and Capt. Woodward called the FSS. Capt. Fitts prepared for an autorotative landing in case the other engine lost power.

Soon afterward, the No. 1 engine began an uncontrolled overtemp, and Capt. Fitts had to secure it. The pilots made a no-hover, single-engine landing at an unimproved desert strip.

The postflight inspection showed that one of the linkage-assembly nuts for the compressor's variable-vane-actuating system had backed out of position and fallen to the engine deck, which made the compressor vanes close, resulting in the engine rollback and near overtemp.

Lt. Nadim Abu-Haidar

During a night-bombing training sortie, Lt. Abu-Haidar saw an hydraulic 1A system caution, followed shortly by an hydraulic 1B caution, indicating that hydraulic system 1 had failed. The failure made the Hornet's stabilators go to a mechanical-link (MECH) condition. MECH is the fullest degradation of the FA-18's flight-control system, where both flight-control computers and the stabilator-actuator-servo valves are bypassed.

When the stabilators revert to MECH, NATOPS tells the pilot to land ashore with a minimum sink rate. The pilot is also cautioned about violent longitudinal PIOs during inflight refueling.

USS *Carl Vinson* (CVN 70) was conducting blue-water operations. After discussing the situation with the air-wing commander, his squadron CO, and the ship's CO, Lt. Abu-Haidar made the first night approach to a carrier in a Hornet with both stabilators in MECH, receiving an "OK" underlined.

Lt. Carl Wilson
Capt. Craig Pearson, USAF
Ens. Mike Lange
Mr. Dick Rader

During a low-level training mission, Mr. Rader (civilian contract pilot) and Ens. Lange (SNFO) saw two groups of birds ahead of their T-39N. The pilot avoided one group, but a turkey buzzard from the second group struck the pilot's overhead window, destroying it. The fragments of the window and the bird hit the pilot and student.

While Capt. Pearson (mission commander) called for a climb, Mr. Rader began a climbing left turn to 2,500 feet AGL and slowed down. Lt. Wilson (IUT) examined Ens. Lange, who was not badly hurt. Lt. Wilson decided to have Ens. Lange help Mr. Rader while Lt. Wilson coordinated a divert with ATC to Monroe. The pilot completed a controllability check and confirmed his engines weren't damaged.

Deciding that the damage was limited to the cockpit and navigation aids, the crew decided on a straight-in to Monroe Regional Airport. They completed the checklists and landed.

After climbing out, they found that the UHF antenna had also been destroyed. Ens. Lange required stitches.

Pop-Ups

- Birds on the Move
- Melatonin Doesn't Fly
- Stand-Down, Stand-Up or Step-Back
- Shallow-Dive Bombs Fall Short
- Shear-Pin Glitch
- New NAVSAFECEN Reserve Unit

Don't Fowl Out

A bird in the hand is worth two in the bush, but not when you're flying; then you want them to stay in the bush. COMMARFORPAC recently warned Marine aviation units the birds will be on the move again, with more bird strikes on the horizon.

Since the first fatal encounter between aircraft and bird in 1912, birds have become a formidable threat to flying. The USAF AWACS mishap in Elmendorf, Alaska, reminds us that even large, multi-engine aircraft aren't immune to this hazard.

Several years ago, an airliner struck a condor at 37,000 feet. However, most bird strikes occur below 1,000 feet AGL with the highest percentage taking place below 200 feet.

All aircrew and ATC personnel need to be alert for bird activity. Know their location, migration routes, nesting sites, and when and where they are most active. Be prepared to alter operations, and always have a backup plan ready in case you anticipate meeting a bird head-on. Don't strike out.

Aviators Cautioned About Melatonin

Flight-crew members shouldn't take melatonin, a natural hormone being tested as a treatment for insomnia, biological rhythm disorders, and cancer, according to Stanley R. Mohler. He is a professor and vice chairman at Wright State University School of Medicine, Dayton, Ohio.

In his article in Flight Safety Foundation's *Human Factors & Aviation Medicine Newsletter*, Dr. Mohler said, "Despite claims about its effectiveness in inducing sleep and producing other health benefits, it is still not known whether long-term melatonin use can result in side effects."

Flight crews who fly long-haul and international routes are subject to sleep disturbances and circadian-rhythm disruptions because of duty time and scheduling factors. Some claim melatonin helps them fall asleep, cutting recovery time from jet lag.

"As further research of melatonin continues, it may some day become more widely used on an as-needed basis," Dr. Mohler said. "But for now, flight-crew members would do well to follow a conservative course and refrain from taking the hormone. In five years, we should know a great deal more about it."

[*Melatonin is not authorized for use in naval aviation. It has unpredictable, unknown side effects — Capt. Myron Almond, Head, Aeromedical Division, Naval Safety Center.*]

Safety Stand-Up a New Twist

To pinpoint risks, COMNAVAIRPAC squadrons held one-day safety stand-ups in August. Not to be confused with stand-downs, the safety stand-up concept called for analysis of a normal operational day by qualified observers from a sister squadron, other commands, the wing, or the base. They watched all scheduling, planning, briefing, training, maintenance, and debriefing. They checked how safely a squadron was doing business.

"The safety stand-up concept was proposed by RAdm. Frank Dirren, Jr. (COMNAVSAFECEN), and may well have worn other titles in the past," said VAdm. Brent Bennitt (COMNAVAIRPAC). "If we knew what factors were most likely to drive risk levels up, we would know what risk-management controls to use in advance. We wanted to identify possible risk factors and assign hazards a risk-assessment code so the CO could set priorities."

Meanwhile, USAF's Air Combat Command had another twist — a "step-back" day. Gen. Richard Hawley, ACC commander, said rather than a stand-down day, the squadrons didn't stop all flying.

Bombs Away but Short

During a practice run, two FA-18Cs dropped thermally-coated, Mk-83 low-drag, general-purpose bombs. Some hit well short of the target.

They were delivered from vertical ejector racks (VERs) at 23,000 feet MSL from level to 15-degree dives at Mach 0.93-0.95.

Two were severely unstable and hit 1,800 feet short of the target. One tumbled and landed 6,500 feet short.

Bombs delivered in dives greater than 30 degrees at similar Mach numbers fell as advertised and hit near the target.

Mk-83 bombs shouldn't be delivered in shallow dives between Mach 0.93-0.95. Obviously, bombs that fall more than a mile from the target are extremely dangerous, even when dropped on an isolated range.

Glitch in SEAWARS

A left SEAWARS unit separated from a parachute riser because pins on both the plug assembly and the piston assembly were sheared. This allowed one of the parts to recess and release the riser.

This is the first reported SEAWARS unit that separated because of maintenance error since the release of Aircraft Systems Bulletin No. 650. Commander, Naval Air Warfare Center, Weapons Division, China Lake, recommended to COMNAVAIRPAC a one-time inspection of the integrity of shear pins for all SEAWARS units assembled at AIMD North Island.

Reserves to Assist Safety Center

A Naval Reserve augment unit now supports the Naval Safety Center. Reservists with experience developing Navywide safety and analysis programs make up the unit, which has 48 billets.

Commanding NAVSAFECEN Reserve Unit 0186 is Capt. James A. Cunningham, a first officer for USAir from Boston. The executive officer is Cdr. James J. Cain, who is with the National Transportation Safety Board in Washington.

The Center's Reserve coordinator is LCdr. Terry Carmon, head of the Deck and Combat Systems Division, Afloat Safety Programs, (757) 444-3520 Ext. 7133 (DSN 564). E-mail him at TCarmon@safecen.navy.mil.

Edited by Bud Baer. Contributors can contact him at (757) 444-3520 Ext. 7246 (DSN 564).

Milestones

Command	Date	Hours	Years
HSL-46	09/12/96	60,000	7
VAQ-209	10/01/96	19,600	19
VAQ-140	10/01/96	17,500	11
VAW-125	10/03/96	55,000	28
HSL-51	10/03/96	31,000	5
VAW-123	10/16/96	59,000	28
VP-9	10/27/96	112,000	18
NAS Barbers Point	11/01/96	7,900	10

Class A Mishaps

The Navy and Marine Corps had 6 Class A flight, flight-related and ground mishaps before 1 November in FY97. The following mishaps occurred since 24 August:

Aircraft	Date	Command	Fatalities
HH-60H	10/25/96	HS-15	3

The helo was in a starboard-delta pattern when it crashed into the Persian Gulf.

AV-8B	10/18/96	VMA-513	0

The engine stalled and would not relight; the pilot ejected.

CH-46E	10/16/96	HMM-166	0

The helo had an in-flight fire and ditched in the mid-Pacific Ocean. The aircrew egressed safely.

T-2C	10/10/96	VT-23	1

The aircraft crashed into the ground while in the landing pattern.

AV-8B	10/07/96	VMA-223	1

The aircraft exploded in flight during an air-to-ground mission.

AV-8B	09/16/96	VMA-231	0

The aircraft crashed into the ground during a low-level training flight. The pilot ejected.

Class A Flight Mishap Rate

	FY97* thru 10/31		FY96 thru 10/31	
	No.	Rate	No.	Rate
Navy/Marine	5	3.68	4	3.06
All Navy	2	1.93	1	1.03
All Marine	3	9.32	3	8.87
NAVAIRLANT	1	3.57	1	3.43
NAVAIRPAC	0	0.00	0	0.00
MARFORLANT	1	8.85	1	8.08
MARFORPAC	2	13.34	1	6.39
NATRACOM	1	3.57	0	0.00
NAVAIRRES	0	0.00	0	0.00
4th MAW	0	0.00	1	30.19
NAVAIRSYSCOM	0	0.00	0	0.00
Non-MARFOR	0	0.00	0	0.00
Non-TYCOM	0	0.00	0	0.00

*FY97 data subject to change.

Tear out this insert!
Post this newsletter until it's old news.

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For questions or comments, call LCdr. Skaggs
(757) 444-3520 ext. 7245 (DSN 564)

BRAVO Zulu

BZs require an endorsement from the nominating squadron's CO and the appropriate CAG, wing commander or MAG commander. In the case of helo dets, the CO of the ship will suffice. A 5-by-7-inch photo of the entire crew by a squadron aircraft should also accompany the BZ nomination. Please include a squadron telephone number so we can call with questions.

Lt. Ambrose, AME1 Grandas, LCdr. Sitarski and AW3 Leathers.

VP-5

LCdr. Charles Sitarski
Lt. Gary Ambrose
AME1 Ronald Grandas
AW3 Ross Leathers

While on deployment at NAS Keflavik, this crew flew a PMCF to check a replacement elevator-boost package on their P-3C. Weather deteriorated to IMC during the flight.

Weather at the field changed from 1,500 broken to 500 broken, with 40-knot gusts and driving rain.

Approaching 40-feet AGL at the start of the landing flare, the three flight-station crewmen heard a loud snap from the PPC's control yoke. LCdr. Sitarski (PPC) and Lt. Ambrose (copilot) noticed the plane drifting right of centerline. Their yokes were showing a 90-degree split in positions.

Lt. Ambrose backed up LCdr. Sitarski, correcting the P-3 back toward centerline. With both pilots on the controls, they landed on centerline, using rudder and asymmetric power. Because of the strong crosswind and turbulence, neither pilot knew if he had any aileron control.

Only after they had taxied clear of the runway did the crew realize that LCdr. Sitarski's aileron-control chain had snapped!

Lt. Hoffman, LCdr. Collins, Lt. Perry, Lt. Jack and Lt. Hernandez.

VAW-125

LCdr. Don Collins
Lt. Brian Hoffmann
Lt. Kris Perry
Lt. Russell Jack
Lt. Ray Hernandez

Tigertail 603 launched from USS *Enterprise* (CVN 65) in the north Puerto Rico operating area during a COMPTUEX. Climbing through 14,000 feet, Lt. Hoffmann (CAPC) and Lt. Jack (copilot) heard a loud bang accompanied by a subtle right yaw. As they checked their engine instruments, they quickly saw indications of a starboard-engine decouple: zero horsepower, low fuel flow, low TIT, and high rpm, immediately followed by a chip light.

Lt. Jack leveled off, and both pilots started boldface procedures.

LCdr. Collins (CICO), Lt. Hernandez (ACO) and Lt. Perry (RO) coordinated divert and recovery communications between the carrier and Roosevelt Roads.

En route to the naval station, the pilots swapped seats. Lt. Hoffman flew a single-engine approach to an arrested landing.

Inspection later revealed an engine-reduction-gear failure and propeller decouple. This hop was Lt. Hoffmann's second flight as CAPC.

Capt. Wernecke, Sgt. McKelvey, Capt. White and LCpl. Raulston.

HMH-363

Capt. S.T. Wernecke
Capt. T.K. White
Sgt. W.T. McKelvey
LCpl. B.J. Raulston

This helo crew was on a reconnaissance mission of an LZ at 9,000 feet MSL at MWTC Bridgeport. The CH-53D had a severe compressor stall in the No. 2 engine that rocked the helicopter. Recognizing the problem, the crew began emergency procedures by reducing the affected engine to ground idle while Capt. Wernecke (HAC) took control from Capt. White (copilot).

Capt. Wernecke decided to make a running landing at Bryan Field, the nearby civilian airport.

Approaching the field, the copilot advanced the speed-control lever of the No. 2 engine for landing. The HAC landed, using a long rollout and aerodynamic braking.

Postflight showed that a fuel-control unit had developed a metering problem, which caused the compressor stall.

I Love the Smell of Burning Garbage in the Early Morning

by Lt. Ken Durbin

The only surprising thing about this fire is that it didn't happen sooner. At 2310, I had just returned to our FFG anchored off Corfu, having spent the night on shore patrol. Suddenly, the petty officer of the watch announced over the 1MC, "Fire, fire, fire! Class Alpha fire on the garbage barge, starboard side, main deck. Now away the in-port-fire party. This is not a drill!"

Everyone jumped up and ran out of the wardroom and yes, indeed, the garbage barge was ablaze. We all responded well. The fire was out in two minutes.

How did the fire start? The smoking area is located on the starboard break, that's how. The garbage barge is located, coincidentally, just below the place where the garbage is stored on the starboard break.

You may ask why a pilot is concerned with the nearly predictable follies of his shoe-brothers. For three months before the fire, I had tried to get the smoking area moved from its present location at the centerline passageway aft, some 50 feet from a fueled SH-60B. NATOPS clearly forbids smoking within 50 feet of a Seahawk.

However, the ship's XO felt he was not bound by NATOPS and tasked me with providing a better place for his smokers. I thought about the usual gathering places: the 76MM passageway, the missile mag... OK, XO, how about Norfolk? Surprise, the smoking area remained where it was, between our two aircraft.

There is a bright side to this story. The XO was so upset that we burned the garbage barge he proclaimed the smoking lamp would be out until the end of the deployment.

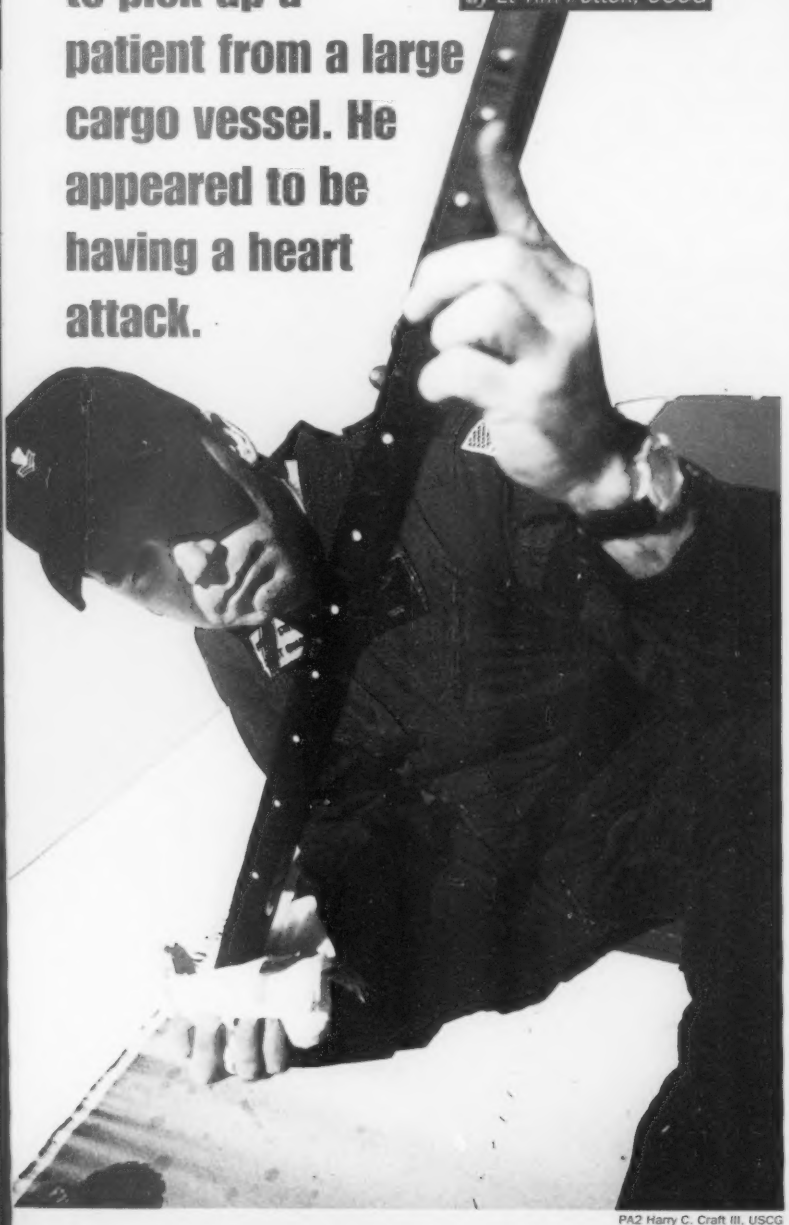
Lt. Durbin flew with HSL-44. He is now an instructor with HSL-40.

Peter Mersky

Tale of an Un

The mission was to pick up a patient from a large cargo vessel. He appeared to be having a heart attack.

by Lt Tim Pettek, USCG



PA2 Harry C. Craft III, USCG

My copilot and I headed out to preflight before a long day — more than nine hours on a law-enforcement patrol. Intel had been good, but previous patrols had yielded limited contacts in the mighty Pacific. We were halfway to the plane when we were recalled by the duty officer. A medevac case was brewing off Mexico. We got the tasking because our plane was full of gas (62,000 pounds), and we had weather and a flight plan already on file. My pulse went up a few beats. Flying had been slow recently, especially SAR.

The mission was to pick up a patient from a large cargo vessel. He appeared to be having a heart attack. A Coast Guard helicopter from San Diego was heading to the scene with a Coast Guard Falcon jet providing overhead coverage. The helicopter was going to hoist the patient and transport him to Cedros Island, Mexico. We would land at Cedros, fuel the helicopter, and transport the patient to San Diego.

As my copilot and I hustled back to the HC-130, I noticed the aircraft was listing to the left. My copilot had newly transitioned to the Herc. This was my chance to impress him. I told him that my first inspection point on the preflight was the crew-entrance door, which can provide a quick visual reference to center of gravity (CG) position.

If you have to step up high to get to the first step, CG is usually aft. With a little step, CG is forward. Today, it was a little step, but we had no cargo, only fuel. I had occasionally seen this condition and, in my experience, it was directly related to the struts on the aircraft. I explained that when you start up

nbalanced Pilot

and taxi out, the struts will settle, sometimes with a lot of noise and movement.

As we strapped in, I checked the overhead fuel panel. A black grease-penciled "X" on the No. 4 tank reminded me that the aircraft logs had stated that the No. 4 fuel-tank indicator didn't work. The No. 4 tank is the most outboard tank on the starboard wing. I asked the flight engineer if the tank had been dipped. To dip a tank, you must venture out on top of the wing and drive home a carefully calibrated stick into the top of the tank. The wet mark shows you how much go-go juice you have. He said the tank had been dipped; there were 7,800 pounds of fuel in it. This cross-checked with No. 1 tank and fuel loading was within limits — or so we thought.

During start-up and taxi, I felt the struts settle, and I told my crew. We were good to go. I conducted an ITO in heavy fog, so I was on the instruments soon after rotation. The aircraft felt like the normal sluggish beast that accompanies a full fuel load. Upon reaching VMC at FL 180, I engaged the autopilot. My yoke looked like it was incorrectly rigged. The plane was flying straight and level with a noticeable right-wing down attitude. I disengaged the autopilot and trimmed the aircraft for straight-and-level flight, which required 15 degrees right wing down of aileron trim. I had more than 1,500 hours of flying the Herc, and I can remember using aileron trim only a handful of times.

My crew and I discussed the situation, and we felt that the No. 4 tank must have been dipped incorrectly, which would support the conditions we discovered on deck and in the air. We were in a race against time. Our ETA to Cedros would put us on deck right about the time the helo would be there. Once on deck, we would have to gas up the helo and get to San Diego as quickly as possible. We decided to proceed to Cedros and dip the tank, then transfer fuel on deck to correct our problem.

During the transit to Cedros, our attention drifted from the weight imbalance. We began focusing on takeoff and landing data from Cedros. Our gross weight, combined with the length of the runway, and temperature and pressure-altitude at Cedros, meant we were too heavy. Our calculated refusal speed was 97 knots, minimum control speed on the ground was 103, and takeoff was 107.

If we took off at this weight and lost an engine after refusal speed, we would not have enough flight-control authority to keep the aircraft on the runway and would have to pull power on one or more of the engines to stay on the runway. With a power reduction, we would not be able to meet our takeoff speed. We would have to reduce aircraft gross weight to equalize our takeoff and refusal speeds. As a crew, we decided to dump fuel to reduce our weight. I was really on top of things, wasn't I?

The trip to Cedros was quicker than I thought, thanks to a strong tail wind. The approach and landing were a little sporty, though. The left wing felt heavy as we headed toward a 4,600-foot runway. Not a lot of room to float it in for a greaser with our landing weight. I decided to plant it near the threshold so I wouldn't eat up a lot of runway on the rollout.

Once on deck, things moved at a rapid pace. The helo was being refueled, the patient was being transferred to the Herc, and the flight engineer was up dipping the tank. We parked off the runway in a gravel turnaround point. As I got off the aircraft, I noticed that the left wing was still lower than the right. This merely confirmed that we had made the right decision.

My flight engineer returned after dipping the No. 4 tank and said that it had read 7,800 pounds. I asked him politely to please have another person dip the tank and confirm the reading, and also to dip No. 1 tank. They both returned looking very confused and reported that both tanks showed 7,800 pounds. I instructed them to try again. Both mechs returned and said that the tank still dipped at 7,800 pounds. How could we be wrong?

...when dipping a tank, make sure that the wings are level, or you will get a false indication.

At that point, I ordered an inspection of all flight-control surfaces. Everything checked out normal. Time was wasting, I had a possible heart-attack patient in my aircraft waiting to get to a hospital, the helo had been fueled, there was not much maintenance support in Cedros, and it was time for checklists.

The flight from Cedros to San Diego and then to homeplate was uneventful. Still 15 degrees of right-wing down aileron trim for straight-and-level flight. When we got back, maintenance found that the struts on the left side of the aircraft were bad. The aircraft started the mission with 3,000-4,000 pounds less fuel in tank No. 4 than the dipstick indicated. In fact, we later transferred more than 4,000 pounds of fuel to No. 4 tank with the dipstick reading only a 100-pound increase. Final landing fuel in that tank was 3,600 pounds — close to two hours of flight time. Good thing we did not get extended.

I learned that when dipping a tank, make sure that the wings are level, or you will get a false indication. Sounds simple, but in a safety stand-down after the incident, most of our pilots and flight engineers said they would have followed the same yellow-brick road that I had.

Get as much information as possible when faced with non-emergency flight issues. I should have called maintenance en route to Cedros. When asking for advice from your crew, do precisely that. As aircraft commander, I processed the information I had, arrived at a decision, told the crew my intentions, then asked them for input. No one spoke up; we all seemed to agree. If I hadn't told them my intentions so early in the decision-making process, I might have received more reactions like, "Hey, we should return home."

Never get overconfident. I felt like I was on top of things, only later to learn that I was about as balanced as my aircraft. When you feel like everything is in place, play devil's advocate.

Lt. Pettek flies C-130s with Coast Guard Air Station Sacramento.

C-130 fuel manuals — NAVAIR 01-75GAA-2-5 — include charts showing corrected values for roll attitude for outboard and inboard main fuel tanks. Check these maintenance publications if you are measuring fuel with a dipstick when the wings are not level.—Ed.

Bad Vibes

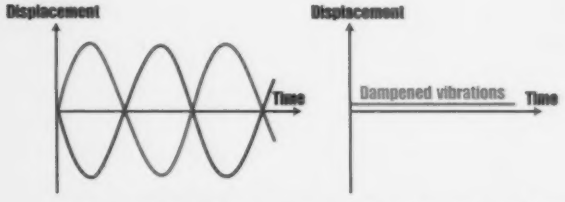
by LtCol. R.E. Joslin, USMC

Mishap summary: While ground-taxiing, a CH-46E began vibrating and then broke into two pieces at station 410.

Anyone who has flown in helicopters knows they vibrate more than fixed-wing aircraft. However, you don't expect a catastrophic fuselage failure when ground-taxiing. Why did this one break up?

Every component or group of components on an aircraft has its own unique vibration, determined essentially by mass and stiffness. By themselves, these vibrations are relatively harmless. The fatigue-life failures associated with them are predictable and avoidable with scheduled inspections and replacement of high-time components. Helicopters are designed so that natural frequencies of critical components are not the same or a multiple (harmonic) of those of another component, or are counteracted by another component such as an AFCS (Figure 1).

Figure 1

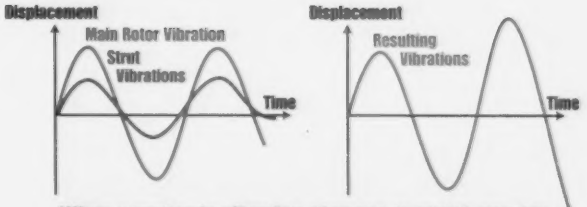


Helos use the AFCS to counteract the natural vibrations.

The problem occurs when one of these frequencies changes and matches that of another component. Now that these two components are in sync, they start bending and warping like the Tacoma Narrows Bridge many of us have seen in a physics-class movie.

In the CH-46 mishap, tires and one of the landing-gear struts were improperly-serviced, much like a bad automobile shock absorber. The altered frequencies of the strut and tires married up with some other vibration from the helicopter, most likely a harmonic of the rotating main-rotor, that concentrated a vibration right at station 410, where it snapped (Figure 2).

Figure 2



When a system's vibration changes to match another, the resulting vibrations can get really ugly.

What options did the HAC have once the aircraft started vibrating? The most dominant source of vibrations in a helicopter are from the main-rotor system, which can excite a very broad range of natural frequencies as it rotates in either a balanced or unbalanced condition.

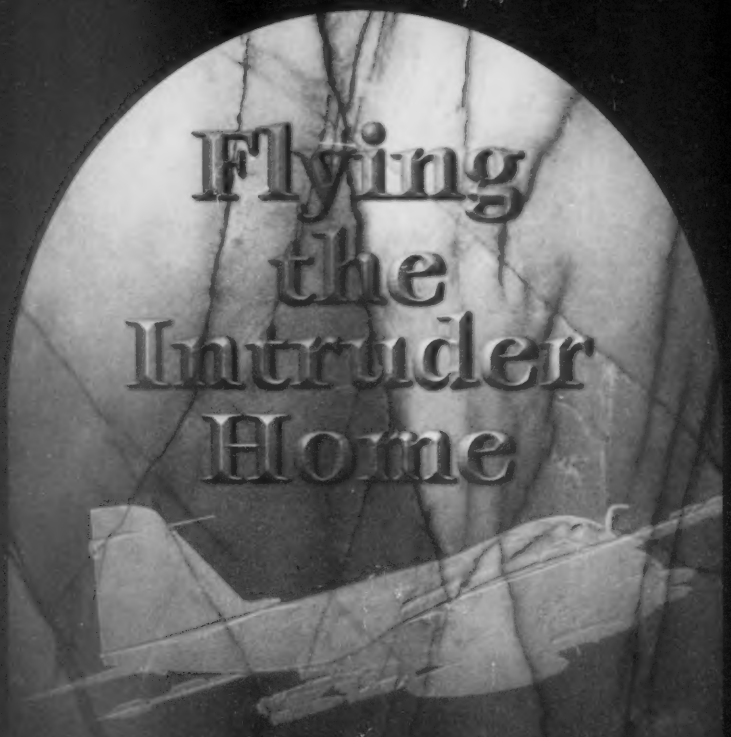
If we stop the rotors, the source of vibrations would be gone. This is what the CH-46E NATOPS gives as one solution if the aircraft cannot get airborne. It is important to note that you have to shut down quickly because as the rotor slows down, it excites other frequencies. What happens if you use the other NATOPS emergency-procedure option and take off instead of shutting down?

Helicopters with articulated rotor systems (H-53, H-46, H-60, H-3) have lead-lag dampers that normally keep the blades equally spaced and balanced about the center of rotation (hub). This lead-lag motion makes the rotor system "soft-in-plane," which means that the blades can be forced out of the balanced condition if the helicopter is, for example, bounced on the landing gear, especially if the oleo struts and tires are not serviced to provide the designed damping. As with an out-of-balance tire on your automobile, the results are dangerous unnatural vibrations. The HAC could have stopped the bouncing and vibrating by taking off.

Either option would have worked, but the time between the onset of resonance and catastrophic aircraft damage can be extremely short. The pilots have to make a quick decision and do something — take off, shut down, drop the load, slow down, speed up or turn — to change and reduce the vibrations.

LtCol. Joslin is the operations officer at the Naval Test Pilot School.

Flying the Intruder Home



In the past 20 years and 3,500 hours, I've had just one hydraulic failure in the A-6E. It was a great horse for an average pilot.

VA-75 *introduced the A-6 to combat in Vietnam in 1965. When the squadron comes home with USS* Enterprise, *and VA-165 returns on board USS* Carl Vinson, *the Intruder will close out a 37-year career that has seen it involved in no less than seven shooting wars and many peacetime deployments throughout the world. One of the few American aircraft that has never served with any other country, the A-6 first flew in 1960 and entered service in 1963 with the Green Pawns of VA-42.*

Intruder stories have been a cornerstone of Approach, *and we have gasped, chuckled, and marveled at the experiences of A-6 crews. Now, as the bomber from Bethpage retires and the surviving attack wing decommissions, the Commander of Attack Wing, U.S. Pacific Fleet, Capt. Terry J. Toms, a long-time A-6 pilot, offers a few thoughts.*

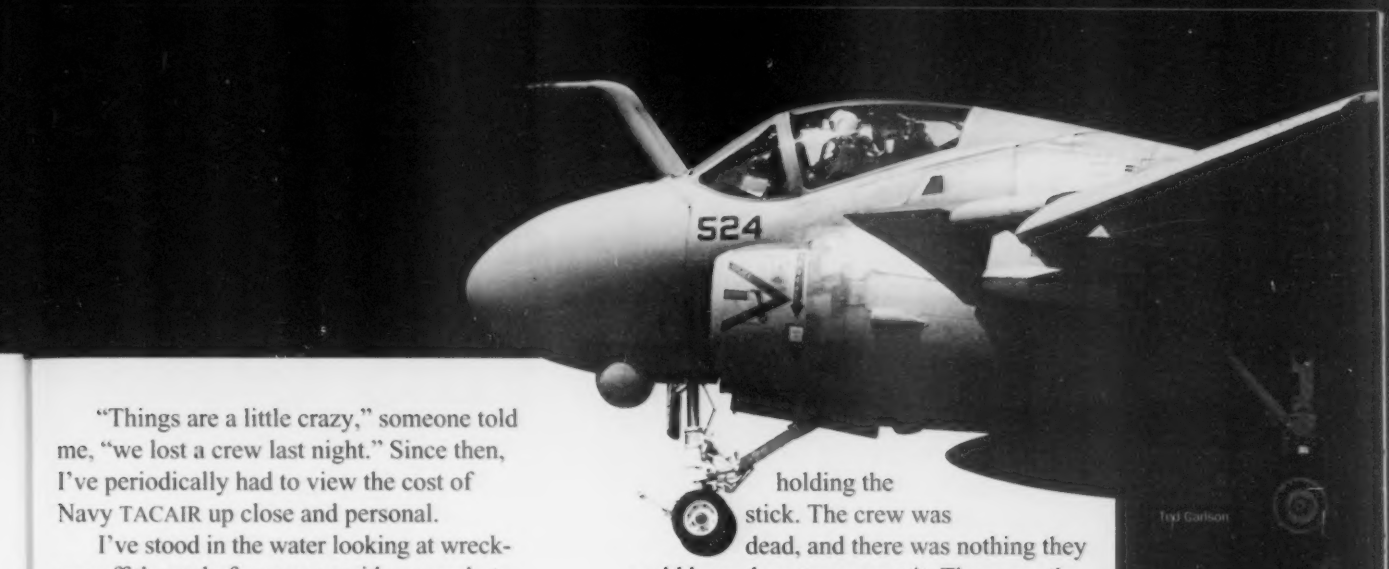
Military history is full of stories about men who rode into battle on trusty mounts that became subjects of devotion. A good horse often meant the difference between coming home carrying your shield or being carried on it. My "warhorse" for 24 years has been the Intruder, but the day is rapidly approaching when I will ride the A-6 to pasture for the last time.

The Intruder had all the classic attributes of a great mount. It was honest and forgiving, with long legs and able to carry a heavy load. It brought its riders home from battle despite its wounds. It was a true thoroughbred to the end, and often the only horse for a particular job when aviators had to go to bad places on dark nights. My devotion comes from where she took me and how she brought me home.

During the 4,200 hours I spent with the A-6, I experienced only three in-flight emergencies. In the past 20 years and 3,500 hours, I've had just one hydraulic failure in the A-6E. It was a great horse for an average pilot.

I have the prerequisite number of sea stories, but they all come from people outside the cockpit trying to kill me with guns or radar, or more frequently, the guy with the reins (me) showing bad judgment or not enough skill. But my faithful steed never let me down.

As a prelude to disestablishment, my wing commissioned a bronze plaque listing our Whidbey forebears, friends, peers, and successors who gave their lives in Pacific Fleet Intruders – 86 people. Forty-three of them died since I walked into VA-128 in 1973.



Ted Carlson

"Things are a little crazy," someone told me, "we lost a crew last night." Since then, I've periodically had to view the cost of Navy TACAIR up close and personal.

I've stood in the water looking at wreckage off the end of a runway with a parachute wrapped around the A-6's tail. I've stood in a phone booth in South Dakota while on leave, crying as the SDO told me two of my JO buddies had done loops on a low-level until they ran out of airspeed, altitude and ideas. I've watched dumbstruck as two of my former FRS students dove into the water three seconds off the cat on a dark night. I've sadly contemplated a salvaged Intruder's cockpit after a fellow jaygee forgot to lower his flaps. I've tried to make it through the eulogy for a pal while his four-year-old stared at me from the front row. I've heard the plaintive calls of a fellow skipper to "Jackal 404," who didn't return from a night mining mission over Iraq.

Many of our losses come with the territory. "Did not return from night combat mission" is a frequent one-line explanation for two friends who didn't walk back into the ready room on Yankee Station during Vietnam.

As I thought about the 41 non-combat losses since I first crossed Deception Pass Bridge, it occurred to me that 30 of those aviators died in aircraft that were healthy and strong, without any known problems. I've seen mishaps in my community and others that I call "Lindbergh accidents." Because of human failure outside the cockpit or a rare material failure, it wouldn't have made any difference if Lindbergh was holding the stick. The crew was dead, and there was nothing they could have done to prevent it. Those are the ones you think about in quiet moments.

Most of my friends did control their fate. They hit the ground or water in a perfectly good jet. Some would be alive today if it hadn't taken so long for relatively simple survival items, like FLU-8s and command ejection, to reach the fleet. But most did it to themselves.

Sixteen of my friends went in at night or in IMC. Ten did something stupid close to the dirt on a perfect day. In many cases, we're left to wonder why two people simultaneously lost SA and became the honorees at a memorial service.

There were some givens in aviation safety before the first Intruder flew, and those constraints will still be there when I park the last of my old friends in the desert. The ground has a P_k of 1.0, (one crew I knew proved the P_k of water is only .99). When one seat crashes, the other is never far behind, so work together. Technology is wonderful, but maturity and experience are even better.

"A person's got to know his limitations," Clint Eastwood once declared. If you have to ask yourself if you feel lucky, it's probably a bad idea.

My takeoffs and landings in the A-6 will be equal. When my faithful warhorse gracefully retires, I'll pat her on the nose one last time, remember some friends, and whisper, "Thanks, baby."

Let's Get the Captain's Opinion on This One

It all started when the ship called to tell us our tasking had been changed. We were on the first of two scheduled flights for that day. After our SSC mission, we would make a logistics support flight for the battle group. Landing on different decks with passengers and mail is always an enjoyable change of pace.

After hot-pumping on board mother, we were ready to spend the rest of the afternoon servicing the battle group. We were limited to two passengers at a time, so we knew we were going to have to make several trips to move all the people off the carrier. The last load of passengers was destined for our ship. The group included the ship combat systems officer (CSO), who was desperately needed on board by the XO to help prepare the ship for an upcoming missile shoot in a few days.

We checked into starboard delta to await our turn on the deck. Unfortunately, we could not get right in because the carrier was conducting flight ops. We were finally cleared for our first pickup. The ATO had a manifest and schedule of deliveries for all the passengers on board the carrier. We made two trips and dropped off the first four passengers without delay. Everything seemed to flow right along.

On the third trip to the carrier, however, we had to wait again to land. By this time, it was late afternoon. We discussed the oncoming darkness and the fact that we could not carry passengers over water at night. We reminded the ship of our restrictions as we headed inbound for our next pickup.

The pickup and delivery to the cruiser went fine. We were sure we would get to the carrier for our last pickup and still have time to deliver the passengers before it got dark. We were so sure that we agreed to take two people from the cruiser to the carrier. We arrived at the carrier and were told to enter starboard delta.

Our entry into starboard delta changed our situation; we set a deadline, which was the time that we had to get clearance to land on board the carrier or leave starboard delta to return the passengers to their own ship before darkness fell. The carrier got busy with an aircraft returning with an emergency, which prompted us to return our two passengers to their cruiser.

During the trip to the cruiser, we told our frigate we would not be able to get our own passengers because it would soon be too dark. We dropped off our two passengers; the cruiser understood our restriction and accommodated us by setting flight quarters to receive their Sailors. By the time we left the CG and headed for our own ship, it was definitely too late to transfer any other people. Before we could give an "operations normal" call to the cruiser, our own ship hailed us on guard.

After we had reestablished communications on land-launch and our datalink, the XO told us to pick up the CSO on the carrier.

"According to the captain," the XO said, "it is absolutely necessary for our operations that we have the CSO on board tonight. I don't care what you have to do, but make sure he is on board tonight."

"Roger," we replied as we continued inbound. We had no intention of listening to a poorly veiled use of the "operational

by Lt. James Veccia

necessity" clause. Once the XO realized that we were not going to the carrier, he called the air det OinC to ask why his pilots were disobeying direct instructions.

The first question the OinC asked was, "XO, is it night yet?" The OinC reminded the XO that we were forbidden to carry passengers at night except for operational necessity. Only when the OinC suggested that the captain be asked if he did want to declare operational necessity did the XO back down.

It turned out that the XO had a personal interest in getting the CSO back on board.

Fearing there might be some confusion about operational necessity and who can authorize it, the OinC reviewed the textbook definition with the XO. Apparently, the XO was not aware of the significance or magnitude of what he was asking. His eyes got big as he read the definition, especially the part where the mission must justify the possible loss of the aircraft and aircrew.

The aircrew in this story did everything right, but senior leadership tried to make them do something they shouldn't. The HAC told me I could log that flight as significant HAC training because I saw firsthand how poorly versed others were in fundamental responsibilities and requirements in operating a helo from a ship. We helo pilots know our limits. We are responsible for ensuring that the people we work with know and understand those limits as well as we do.

Lt. Veccia flies with HSL-44.

The aircrew did everything right, but senior leadership tried to make them do something they shouldn't.

Peter Mersky

The skipper still wanted to talk to me, but I blocked him out. "Communicate" still comes after "aviate and navigate."

Everyone
I'm Trying to

by Ltjg. Jeff Locke

It was a beautiful August day to fly. As a new CTPC with 650 hours in the C-2A, I was looking forward to the novel experience of flying FCLPs as the aircraft commander rather than as a switch pilot. We launched for NAS Oceana and bounced through sunrise and into the morning. When we finished the FCLPs with 6,000 pounds (half a bag) remaining, we completed a maintenance in-flight ramp check before going home.

The copilot flew a visual to the overhead runway 10 at Chambers. After a normal break, he lowered the gear. There was an immediate loud thump accompanied by a slight airframe shudder and swerve to the left. The copilot had no trouble controlling the aircraft as we checked our engines and other systems for secondaries. Our right main gear and nosegear came down after a normal cycle time, but the left main remained barber-poled with a light in the gear handle. The crewman could see from the cabin window that the actuator on the left main gear had separated from the strut.

I decided to call the tower and orbit overhead to complete the EPs for main-gear actuator-failure procedures before also advising base of our exact problem. I didn't want to have everyone talking to us just yet.

Stop Talking!
Bring Back the CO's Plane!

Before we could finish reading the appropriate section in the PCL, we had the SDO, skipper, and LSO calling on base, the tower calling to ask what assistance we might need, and approach calling to confirm we were declaring an emergency! All the help made me think how glad I was that we still had two hours of fuel to sort this all out.

The copilot took all the callers except the LSOs, now on paddles-tower freq, who requested some low passes so they could check the gear. The copilot flew two low passes while the LSOs read the emergency procedures to us, and we discussed options. We agreed the best course of action would be to climb to altitude, do a side-to-side seat swap, dump fuel, and fly a left-engine-secured approach to a field arrestment as noted in NATOPS. During this time, the other players still quizzed us regularly. The skipper wanted to talk to me, but I blocked him out. "Communicate" still comes after "aviate and navigate."

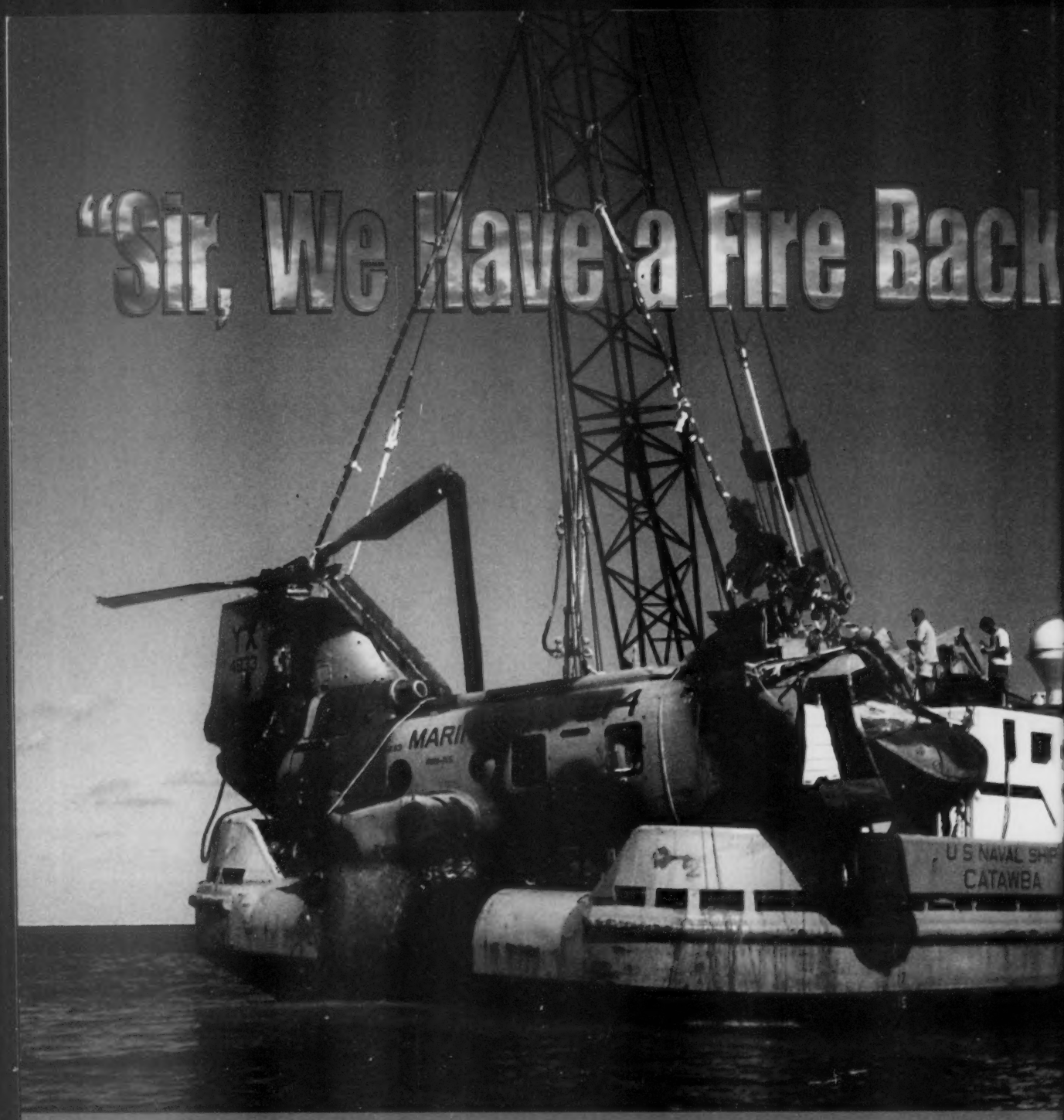
We reseated ourselves at altitude, did our crew brief, and told everyone calling us about our intentions. After some motivational words from the skipper, we started our approach, deselecting everyone except the tower-LSO frequency. During the descent, we completed our checks and reviewed single-engine approach, go-around, and emergency egress.

We flew an uneventful single-engine approach to a field arrestment. We had to maintain approach power on the right engine to prevent the aircraft from rolling back and collapsing the left main gear while the in-flight PC exited out the ramp and placed the ground lock on the gear.

It turned out the gear actuator had sheared at the lower attaching point, allowing the gear to fall free. The impact without snubbing action had crushed the down-lock sensor and cracked the drag brace.

Lesson Learned: As the aircraft commander in an emergency (even one as textbook as this), you must manage outside support while coordinating crew duties, which may mean firmly silencing unnecessary assistance. We all hate to sit by the radio, waiting to hear what's going on when an emergency is in progress. However, too much unrequested help can cause as much confusion in the cockpit as none at all.

Ltjg. Locke flew with VRC-40 at the time of this story. He is now an instructor with VT-21.



**Using all the power our good engine could
landed fairly smoothly in the calm ocean.**

by Capt. Walter W. Audsley, USMC

On what was supposed to be a routine training flight, I experienced every pilot's worst nightmare. Shortly after we launched from the ship with 18 Marines on board, our No. 2 engine exploded, and we were forced to ditch our CH-46E in the Indian Ocean.

I was a fairly junior copilot, halfway through my first six-month WESTPAC deployment. We had just left the Persian Gulf and were en route to Kenya for an exercise. I had been picked to go on a two-plane det to another ship in the amphibious ready group (ARG) to train with their embarked Marines.

The plan was simple and straightforward: two CH-46Es would depart the LPH on Friday night and do night-vision goggle CQs at the ship. The following day, our aircraft would transfer passengers and cargo throughout the ARG while our wingman did fast-roping with one of the companies from the battalion. On Sunday, our crews would switch missions.

Saturday's flight went smoothly. The aircraft commander and I were good friends and had flown together numerous times, which added to the enjoyment. When Sunday arrived, we were well-rested and eager to get started. We briefed in the morning with the same Marines who had done the fast-roping the day before, along with the Air Boss and ship's captain.

Following the brief, the aircraft commander and I completed a NATOPS brief and proceeded to the flight deck for our 0915 launch. We launched, and the first stick of 14 Marines performed flawlessly. With the second stick loaded and a total of 18 on board, the aircraft commander took off.

As we passed through 100 feet and 50 KIAS, our No. 2 engine exploded, engulfing our aircraft in flames. Our crew chief, following NATOPS procedures, told us in a calm, yet firm voice, "Sir, we have a fire back here!"

Since we were heavy with fuel and loaded with Marines, our aircraft was outside its single-engine envelope. A forced landing in the water was our only option. While I performed emergency procedures,

the crew chief and observer tried to keep the passengers inside the aircraft. The intensity of the fire created an inferno in the cabin, and most ran forward to escape the flames.

Using all the power our good engine could provide, we landed fairly smoothly in the calm ocean. Almost immediately, the rotor blades hit the water, and the aircraft rolled right and began to sink. Remembering my underwater survival training in flight school, I grabbed a good reference point and waited for the blades to stop. I unfastened my lap belt and left the aircraft.

When I surfaced, my first concern was accounting for everyone and getting us grouped together for rescue. Before I could even get a head count, I heard the SAR swimmer screaming in the back of the aircraft unable to get out. He had been sitting almost directly beneath the engine and was critically injured. A badly burned Marine and I swam over and freed him from the wreckage.

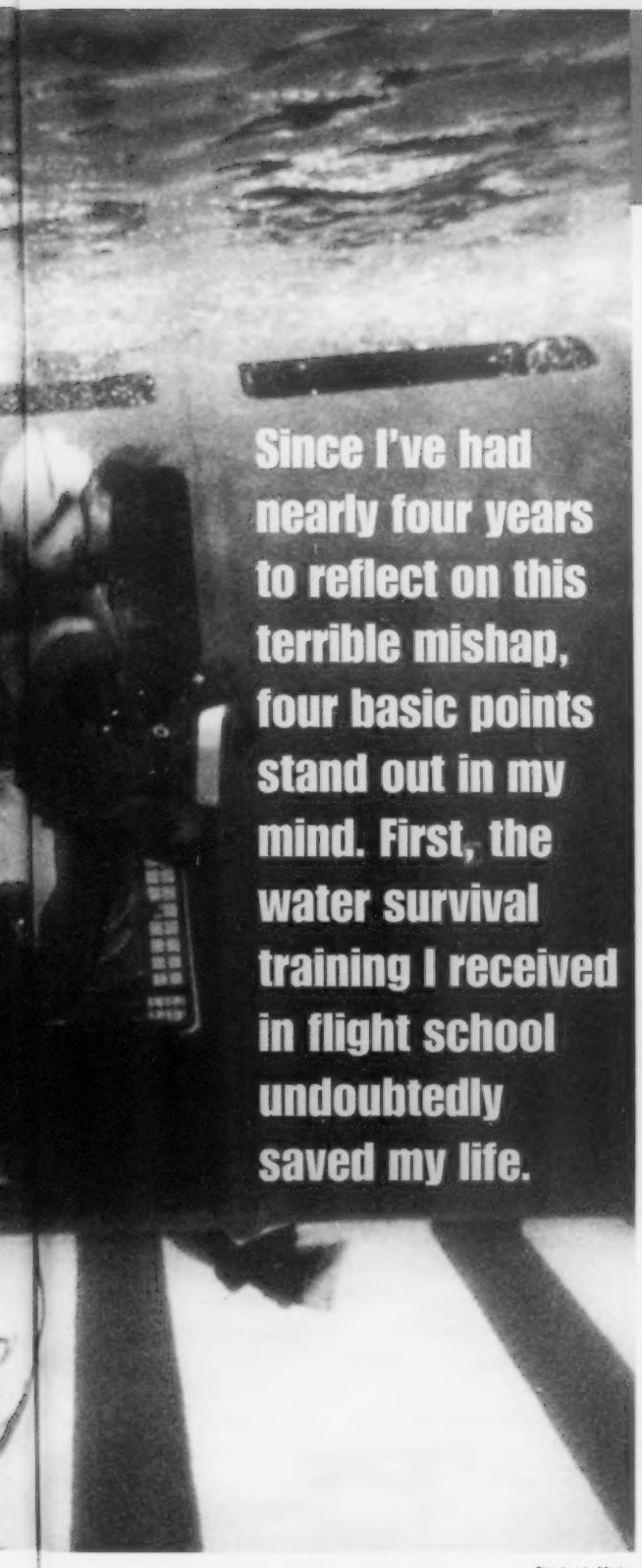
Unable to join the main body of survivors, I called for the crew chief to swim over and help me care for the SAR swimmer. I counted heads and realized four Marines were missing, including the aircraft commander.

Within minutes, two helicopters arrived. I frantically waved to them so one would come to my position first. The SAR swimmer was the most critically hurt and needed medical attention immediately. Fortunately, the pilots saw me and rescued him first. Two others were hoisted out by helicopter, and the remaining 11 were picked up by motor whaleboat. Surprisingly, all of us were back on board the LPD within 25 minutes.

The four missing Marines were declared lost at sea. My minor injuries required only first-aid treatment. All the other survivors had second- or third-degree burns, and many were transported to Germany for further treatment.

The cause of the mishap could not be determined until the aircraft, resting in water more than 5,000 feet deep, was salvaged a year later. After a thorough mishap investigation, the problem was traced to a faulty O-ring.

Since I've had nearly four years to reflect on this terrible tragedy, four basic points stand out in my mind. First, the water survival training I received in flight school undoubtedly saved my life. As soon as we landed in the ocean, the



Charles L. Minke

aircraft rolled over and began to sink. When I successfully jettisoned my door as the water reached my chest, I was sure I could get out of the aircraft.

Although I was scared to death, I never panicked. Since I had a good reference point and my door jettisoned, I didn't waste valuable seconds getting my HEEDS bottle out. When the cockpit was completely submerged and the torrent of water had subsided, I unfastened my lap belt and swam out the door. I also waited until I surfaced to inflate my life vest because I was afraid of getting tangled in the wreckage. The entire sequence of events could not have mirrored my initial water training scenario any more closely.

Secondly, less than eight seconds elapsed from the explosion until we were in the water. Very little was said during this time, although each crew member was busy fulfilling his role. A thorough NATOPS brief and memorized emergency procedures are critical. There is no time to clarify a question you might have had in the brief.

I can't adequately express my admiration for the bravery of the 16 Marines in back. The potential for loss of life was great. Although many had received shallow-water survival training, it had been very basic. Despite the fact that all were severely burned, they worked as a team to help each other out of the aircraft. It is difficult to imagine going from a raging inferno to being in a sinking aircraft, painfully burned but having the presence of mind to help each other exit the aircraft.

Lastly, I can't overemphasize the importance of organizing on the surface. Not only did it allow us to quickly determine who was missing, but we were able to prioritize who had to be rescued first. The most seriously injured Marine, the SAR swimmer, probably would not have survived had he not been retrieved immediately.

This short but eventful flight will always be with me. Four Marines lost their lives that day, including my very good friend, all because of a small O-ring. I changed from an invincible copilot to a happy-to-be-alive Phrog pilot during those fateful minutes. Being prepared and thoroughly briefed before each flight can make the difference between having one heck of a sea story and becoming a tragic part of someone else's story.

Capt. Audsley flies with HMM-166 (REIN).

We Lost Two Planes a Day

by Cdr. Tim Cepak

Let's take a ride back in time. You put on your dress khakis and jump into your brand new 1955 Chevy Bel Air coupe and drive to your squadron where you fly the hot F9F-8. When you get to the ready room, you pick up the latest copy of the *Weekly Summary of Major Aircraft Accidents* for the week of 19-25 Sep 1955. Here is the "Box Score":

Major Accidents	**1955**	**1954**
This Week	34	41
Total to Date:	1151	1505
Fatal Accidents	**1955**	**1954**
This Week:	3	7
Total to Date:	172	195
Fatalities	**1955**	**1954**
This Week:	3	14
Total to Date:	241	330
Strike Damage	**1955**	**1954**
This Week:	7	17
Total to Date:	430	518

You stop reading now because someone has broken out the acey-deucy board. But as you light up your Lucky Strike, you feel good because the trend clearly shows improvement in naval-aviation safety.

We snap to the present day and look at our mishap-rate trend over the last few years. We, too, might feel good. We achieved our current record by making substantial changes: introduction of the angled flight deck, the NATOPS program, and the advent of OPNAV 4790. These programs had excellent, verifiable payoffs. However, even though we made a vast improvement over 1955, should we feel good about our mishap rate? Or should we work to make another incremental improvement in naval aviation-safety?

The answer is clear: The Navy and Marine Corps are still losing more than 30 aircraft per year, but even one loss is one too many. How do we get there?

COMNAVAIRPAC chartered a quality management board (QMB) to work on constant improvements to naval-aviation safety. Since human error is a cause factor in about 80 percent of mishaps, the board is focusing on reducing those mishaps. Chaired by COMCARGRU THREE, the QMB is composed of representatives from each type command and aviation-safety specialists from the Naval Safety Center and Aviation Safety School.

The goal is to build the improvements into the system, and build in the process of improvement itself. The board has been hard at work and has commissioned eight process-action teams to look at specific areas of possible improvement. The teams focus is on these areas:

- leadership accountability
- training, qualifications, standard-operating procedures
- operational risk management
- human-factors evaluation
- organizational effectiveness and culture
- safety-information management
- mishap investigation
- aircraft and aircrew systems

Each of these teams is working to improve current systems while looking for fresh approaches to the problems. The teams strongly want your input. Your thoughts,

regardless how far out of the box, are extremely important. Can you imagine how foreign it may have sounded to an aviator in 1955 to suggest that he should operate the aircraft by a book called NATOPS? That idea is now the bedrock of our profession. Do you have any ideas that will help us improve? Feed them to us by contacting COMCARGRU THREE N31 at DSN 735-2788 or sending e-mail to dfaherty@cnap.navy.mil. You can also get an in-depth look at the QMB programs by going to the Safety Center's WWW page at http://www.norfolk.navy.mil/safecen, and clicking on the QMB topic.

Cdr. Cepak is a P-3 pilot and former CO of VP-8. He is currently CNATRA's ACOS for safety.

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Harrier at 1,600

by Bud Baer

A Harrier was Dash 2 in a section air-to-ground, live-bomb sortie against a target on a small island off Okinawa. After pulling off the target on his first run, the pilot heard a loud bang, followed by severe engine vibration and rising tailpipe temperature. He retarded the throttle to idle and climbed to 15,000 feet, trading airspeed for altitude.

He shut off the engine and restarted it; then he advanced the throttle to 70 percent. He again felt severe vibration and saw his tailpipe temperature climbing beyond limits. He shut down his engine again and restarted with the same results.

Now below 2,000 feet, he ejected and soon was rescued. The AV-8B hit the South China Sea at 250 knots and sank in deep water.

Forty-six percent of Navy and Marine Corps Class A flight mishaps end up in the water. To prevent similar crashes, the Navy salvages aircraft wreckage that may shed light on the causes. Underwater salvage is costly and difficult, and the Navy must first determine that the effort could prevent other aircraft mishaps. This Harrier mishap met the requisites for salvage.

The Naval Safety Center mishap investigator boarded USNS *Narragansett* to begin the search.

The Harrier engine salvaged from 1,600 feet on the ocean floor provided the answers necessary to determine what caused the mishap. The ROV (upper, left) was the key to recovering the Harrier.

Photos by Bill Gregory

Feet Deep

The ship used two devices to locate and retrieve the wreckage, a sidescan radar and an ROV (remotely operated vehicle). The ROV is propelled electrically and carries a target-locating sonar. Its two arms can work with tools and attach rigging for raising aircraft and parts. For photos, the ROV has a 35mm camera, and black-and-white and color television cameras that produce high-quality videotape. It can be used to depths of 7,200 feet.

The sidescan radar located the wreckage at 1,600 feet. The Harrier's engine was essentially intact and found 20 feet away from the tail.

Investigators on scene examined the engine and noted a number of discrepancies that could be related to the mishap cause. They sent the engine to NADEP Cherry Point for disassembly and inspection. Engineers discovered that internal FOD had caused major damage to three turbine-rotor assemblies.

Investigators recommended more durable, heat-resistant thermal-barrier coating for the leading edges of the engine's nozzle vanes. They also suggested AV-8B squadrons obtain flexible borescopes for more frequent engine inspections.

"We learned a lot about the Harrier engine by bringing up the one from this mishap," said Bill Gregory, assistant head of the Safety Center's Aircraft Mishap Investigation Division and investigator on this mishap. "The salvage cost of $750,000 is not great when you consider we might, with our newly gained knowledge, prevent one, two or even more Harriers from crashing. Saving one plane will make our effort well worthwhile."

The Harrier is pulled up in two pieces by the crane on the USNS *Narragansett* (AFT-17).

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Bingo over

by LCdr. Nelson Hendricks

I never would have dreamed it: a TAR in combat over Bosnia. I always thought the reserves would be used during World War III, but I found myself and my fellow reservists fully integrated into VAQ-141 during the summer of 1995. The Star Warriors and the Shadowhawks were deployed together in USS *Theodore Roosevelt* operating in the Adriatic sea.

For the last two years, I had become quite used to flying with other crew members who had at least 1,500 hours in the Prowler. On this particular day, I was flying with three junior crew members from VAQ-141 who had only about one-third that amount. The XO of VAQ-141 was the lead, and we were expecting another average "groundhog day" Bosnian SEAD mission as part of Operation "Deny Sleep." NATO kept trying to employ its might, but the U.N. rarely gave the go-ahead.

Bosnia

These missions were usually flown by supersonic fighters whose noise would scare the Bosnian Serbs, or at least slow them down.

The Bosnian Serbs were rolling into the eastern-enclave town of Srebrenica. The papers were reporting mass executions on the ground, and NATO was pressing for air strikes. As we maneuvered our Prowler section towards Srebrenica, the AWACS gave the odd order to break section integrity. The Combined Air Operations Center (CAOC) in Vincenza had decided that one EA-6B and one EF-111 would go to the tanker while the other two joined as a section and continued to monitor the situation in Srebrenica.

My crew and I now found ourselves leading the mixed section with an EF-111 crew with which we had never briefed nor flown section. The EF-111 switched to our frequency and tried to rendezvous. We quickly realized that the EF-111 and EA-6B do not fly well together. We were flying at max conserve to save gas, but this made the Raven do S-turns to keep from departing.

As we continued orbiting in this sloppy, unbriefed SEAD section, the CAOC came up with another bright idea. They wanted our flight to descend to 15,000 feet and fly over Srebrenica to provide "air presence." These missions were usually flown by supersonic fighters whose noise would scare the Bosnian Serbs, or at least slow them down.

During the brief, intel had not discounted the possibility of mobile SAMs in the area, so as we descended and worked up to our amazing .86 Mach limit, little light bulbs started appearing over our heads: Maybe we shouldn't do this! We were team players, yes, and people were getting killed below us, yes. But was this the smart thing for a Prowler to do?

I called CAOC and, as diplomatically as possible, tried to convince them that this was not the proper tactical employment of an EA-6B. After several language and secure-radio problems, we finally got our point across. CAOC ordered the EF-111 to go supersonic over the town, while we provided jamming and HARM coverage.

After a quick check of the combat checklist, we were ready to go. Or were we? After all the radio drills and confusion, we had not checked our own fuel state in quite a while. We were nearly at minimum fuel, and it was time to leave. Meanwhile, the EF-111 had already detached and started his run

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through the possible SAM ring. We could not leave now. We had to wait for the EF-111 to complete his run. We had put ourselves in a tight spot trying to be good team players.

The supersonic run over Srebrenica lasted about two minutes, and we began flying away from Bosnia. Our EF-111 brother exited to the north, and we started a max conserve profile out of country. Though below joker, we knew there were always tankers waiting off the coastline. I advised the AWACS that we had to have fuel and requested that they vector a tanker to the gate we were exiting. They said they would work on it.

We hit the coastline — no tanker. Again, I questioned the extremely busy AWACS. The only basket-equipped tanker was 150 miles north and working its way down to us. We limped our way north as we listened to AWACS vector a large strike package into Srebrenica. When finally close enough, the AWACS handed us over to a Spanish C-130 tanker, which supposedly had 13,000 pounds to give us. Fantastic — if we could get enough gas maybe we could join the strike package. As we tried to rendezvous and communicate with the Spanish tanker, it finally became clear to us that this tanker had no gas to give. The pilot refused to extend his basket.

As we tried to rendezvous and communicate with the Spanish tanker, it finally became clear to us that this tanker had no gas to give.

We again contacted AWACS and explained our situation. We had 30 minutes of gas left. The AWACS was a bit distracted with the strike package and promised us that he'd get back to us with more tanker info.

That was it. No more Mr. Diplomatic Guy. We left the AWACS frequency and set a bingo profile to where we thought the carrier was. I contacted Strike and told them about our situation. We would be on the ball with less than 2,000 pounds. I requested a tanker meet us during our bingo. After a huge comm drill and a white-knuckle rendezvous with an S-3, we got only 2,000 pounds. Again, we were back to 30 minutes of flying time, but the scheduled recovery time was 45 minutes away. Because of the carrier's current position, we didn't have enough gas for a shore bingo. No Italian wine tonight. I made sure the ship was aware of our blue-water situation, and they told us to continue to hold overhead.

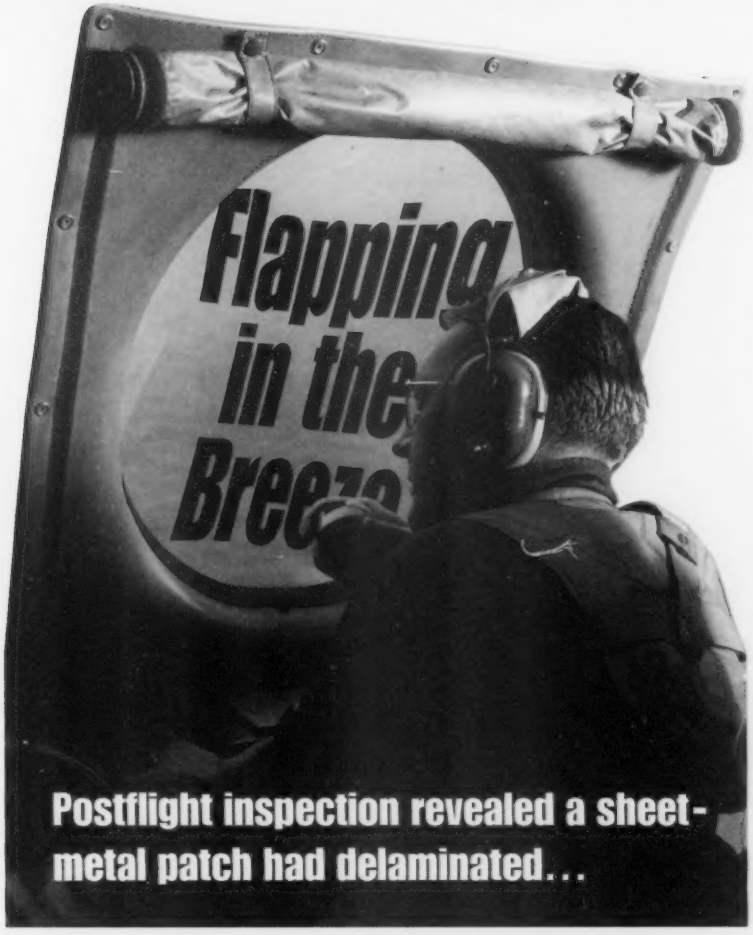
Five minutes later, I called Strike again and asked a huge favor: Could we please recover ASAP rather than tank again and recover 45 minutes later? Strike told us again to hold overhead for the next recovery. We were not having a good day. We had been in the jet for four hours, and my intrepid team-player crew had had enough.

I kept pestering Strike every five minutes. The deck looked clear. What if my young pilot had a hard time getting aboard? We were still below shore bingo. Oh, yeah, the next recovery would be at night! Some fun!

Evidently, I whined enough because the ship turned into the wind, and we recovered with 2.0 on the ball.

In combat, you have to weigh being a team player against employing your aircraft properly. Never let a command center jeopardize your crew's lives. I should have immediately told the CAOC that we were low on gas, that EA-6Bs don't fly supersonic, and that fighters are best suited for air-presence missions. I was too diplomatic and too polite.

LCdr. Hendricks flies with VAQ-209.



Postflight inspection revealed a sheet-metal patch had delaminated...

by AEC Don Magee

We were eight hours into a 10-hour mission over the Caribbean. The port-aft observer summoned me [the senior flight engineer] to his station. What I saw gave me an uneasy feeling. An 18-by-3-inch piece of sheet metal was flapping violently on top of the port, outboard leading-edge of the horizontal stabilizer.

From their viewpoint at the port-aft observer's window, the crew could not tell where the sheet metal was separating on the horizontal stabilizer. They immediately realized our airspeed on the transit home had to be much lower than the max-range airspeed we normally flew during transits. A tropical-storm warning was in effect between the on-station area and home plate.

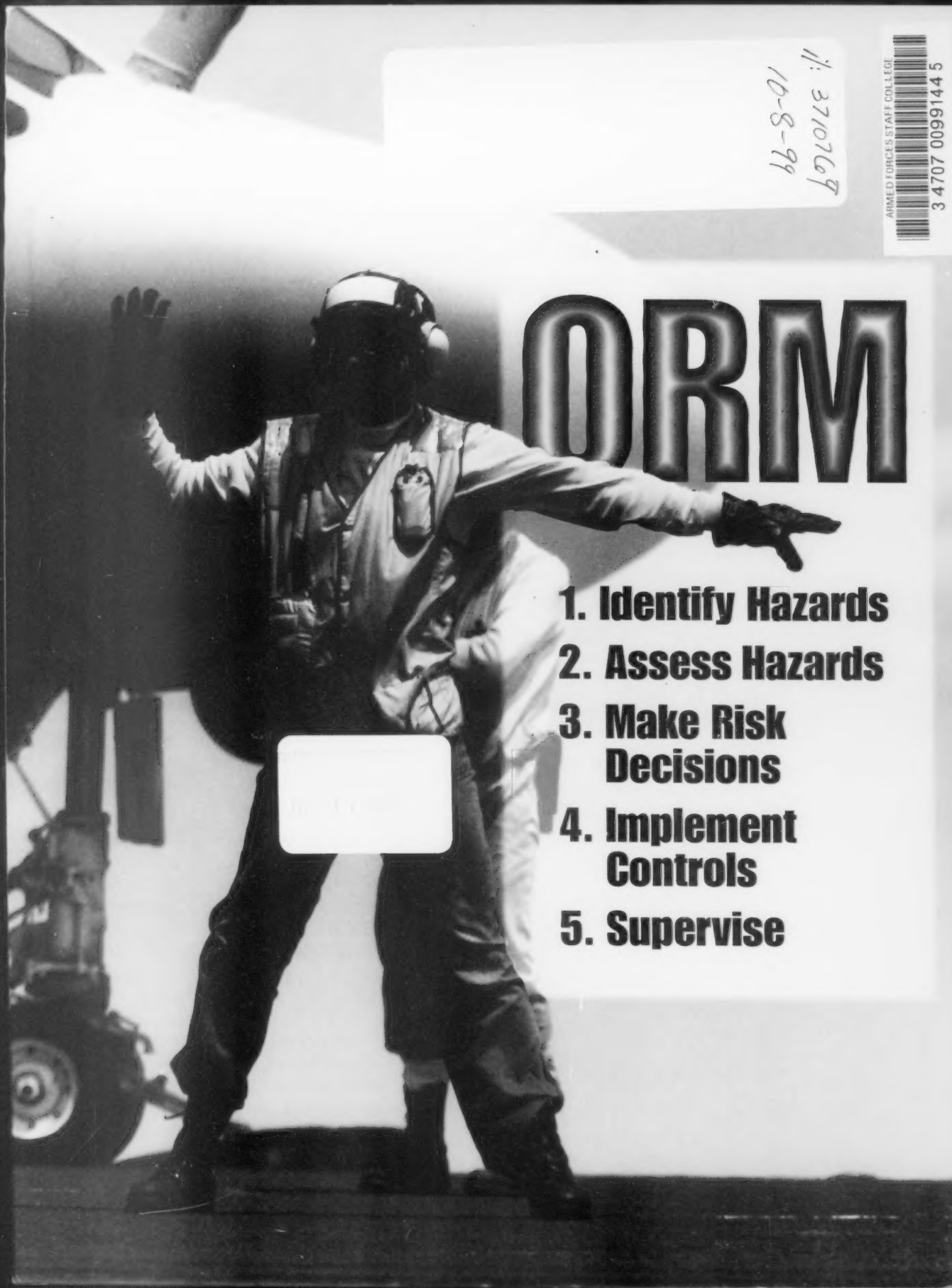
We experimented and found that at an airspeed of 190 knots, the sheet metal flapped. Not knowing if the horizontal-stabilizer structure was affected, the crew decided to land the aircraft at an alternate field that was closer and had much better weather.

Upon reaching the terminal area at the alternate airfield, we did a slow-flight check. We noted no changes in flight characteristics and landed.

Postflight inspection revealed a sheet-metal patch had delaminated from the port, outboard leading-edge of the horizontal stabilizer and started peeling away. The leading-edge was replaced, and the aircraft returned to service the next day.

If the aft observer had been content to look just for surface contacts instead of looking out for other things as well, this incident may very well have had a different outcome. Keep your eyes peeled out there.

AEC Magee is a flight engineer with VP-16.



ORM

1. Identify Hazards
2. Assess Hazards
3. Make Risk Decisions
4. Implement Controls
5. Supervise